# Cinema Rhapsody Mach IV

## Home Theater Controller

# INSTALLATION MANUAL

## HDMI 1.4 - APRIL 2011

ada audio design associates®

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# Safety Instructions & Electrical Warning

**READ INSTRUCTIONS** - All the safety and operating instructions should be read before the appliance is operated.

**RETAIN INSTRUCTIONS** - The operating instructions should be retained for future reference.

**HEED WARNING** - All warnings on the appliance and in the operating instructions should be adhered to.

**FOLLOW INSTRUCTIONS** - All operating and use instructions should be followed.

**WATER AND MOISTURE** - The appliance should not be used near water - for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, etc.

**LOCATION** - The appliance should be installed in a stable location.

**WALL OR CEILING MOUNT** - The appliance should not be mounted to a wall or ceiling.

**VENTILATION** - The appliance should be situated so that its location or position does not interfere with its proper ventilation. For example, the appliance should not be situated on a bed, sofa, rug or similar surface that may block the ventilation openings.

**HEAT** - The appliance should be situated away from heat sources such as radiators, heat registers, stoves, or other appliances that produce heat.

**POWER SOURCES** - The appliance should be connected to a power supply only of the type described in the operating instructions or as marked on the appliance.

**GROUNDING -** Make sure that this unit is always connected to a standard three-prong grounded outlet (the circular pin is ground). When operating this unit at a higher voltage with a different power cord configuration, consult your dealer for the proper power cord/outlet combination to use before operating this unit.

**POWER CORD PROTECTION** - Power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the appliance.

**CLEANING** - The appliance should be cleaned only with a polishing cloth or a soft dry cloth. Never clean with furniture wax, benzine, insecticides or other volatile liquids since they may corrode the face plate.

**POWER LINES -** An outdoor antenna should be located away from power lines.

**NONUSE PERIODS** - The power cord of the appliance should be unplugged from the outlet when left unused for a long period of time.

**OBJECT AND LIQUID ENTRY** - Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.

**DAMAGE REQUIRING SERVICE** - The appliance should be serviced by an authorized service center or qualified service personnel when:

- The power supply cord or plug has been damaged; or
- Objects have fallen, or liquid has been spilled into the appliance; or
- The appliance has been exposed to rain; or
- The appliance does not appear to operate normally or exhibits a marked change in performance; or
- The appliance has been dropped; or the enclosure has been damaged.

**SERVICING** - The user should not attempt to service the appliance beyond that described in the operating instructions. For all other service requirements, the user should contact an Authorized Dealer or Service Center.

**WARNING:**

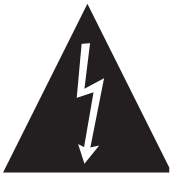
TO REDUCE THE RISK OF FIRE OR ELECTRICAL SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE. REPLACE FUSE ONLY AS MARKED.

**CAUTION:**

TO PREVENT ELECTRIC SHOCK, DO NOT PLUG THIS UNIT INTO ANY OUTLET OR EXTENSION CORD WITHOUT THE STANDARD THREE-PRONG CONFIGURATION, WHERE THE CIRCULAR HOLE IS USED FOR THE GROUND PLUG. ANY UNITS NOT SOLD IN THE UNITED STATES OR CANADA ARE NOT SUPPLIED WITH A POWER CORD. THEREFORE, AN AUDIO DESIGN ASSOCIATES DEALER SHOULD BE CONSULTED BEFORE CONNECTING THIS UNIT TO ANY POWER SOURCE.

**LINE VOLTAGE SELECTOR SWITCH AND REMOVABLE POWER CORD:**

THIS UNIT IS EQUIPPED WITH A VOLTAGE SELECTOR SWITCH. IN MOST CASES, THIS SWITCH WILL REMAIN IN THE 115V POSITION (SEE PICTURE BELOW), WHICH IS HOW THE UNIT LEAVES THE FACTORY. HOWEVER, IF YOU WANT TO OPERATE THE UNIT IN AN AREA THAT USES THE 230V SETTING, CONSULT YOUR DEALER BEFORE PLUGGING THE UNIT IN. IN A CASE WHERE THE 230V SETTING WOULD BE NEEDED, AUDIO DESIGN ASSOCIATES WILL NOT PROVIDE A POWER CORD FOR THE UNIT. THEREFORE, THE USER MUST CONSULT AN AUTHORIZED DEALER OR ADA TO OBTAIN THE PROPER POWER CORD, AS WELL. **MAKE SURE THAT THE VOLTAGE SELECTOR SWITCH IS IN THE PROPER POSITION AND THAT YOU HAVE THE CORRECT POWER CORD BEFORE THIS UNIT IS PLUGGED IN AND OPERATED!**



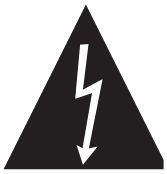
The lightning flash with the arrowhead, within an equilateral triangle, is intended to alert the user of the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electrical shock to persons.

IMPORTANT

**CAUTION**

RISK OF ELECTRIC SHOCK
DO NOT OPEN

**CAUTION: TO PREVENT RISK OF ELECTRICAL SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.**



The exclamation point within the equilateral triangle is intended to alert the user of the presence of important operating and maintenance (servicing) instruction in the literature accompanying the appliance.

# AC Connections

### *AC Connection*

*The Cinema Rhapsody Mach 4 features a dual-primary type of power supply that operates on 115V~/60Hz as well as 230V~/50Hz.*

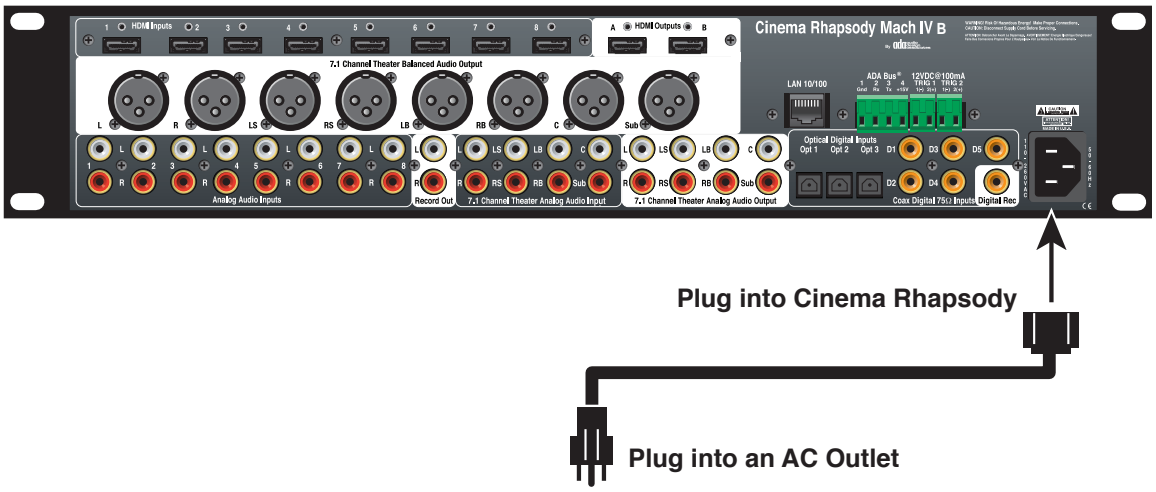
*When using the Cinema Rhapsody Mach 4 with non-US Standard AC power cords, the user must supply the appropriate EIC Female to Male AC power cord.*

### Before You Begin

As you remove the Cinema Rhapsody Mach 4 from its packaging, inspect the condition of the component prior to proceeding with the following steps for AC connection. In the event that the Cinema Rhapsody Mach 4 appears to have suffered cosmetic damage due to shipping, please contact your Authorized ADA Dealer immediately and do not proceed to plug the unit into an AC outlet.

### AC Connection

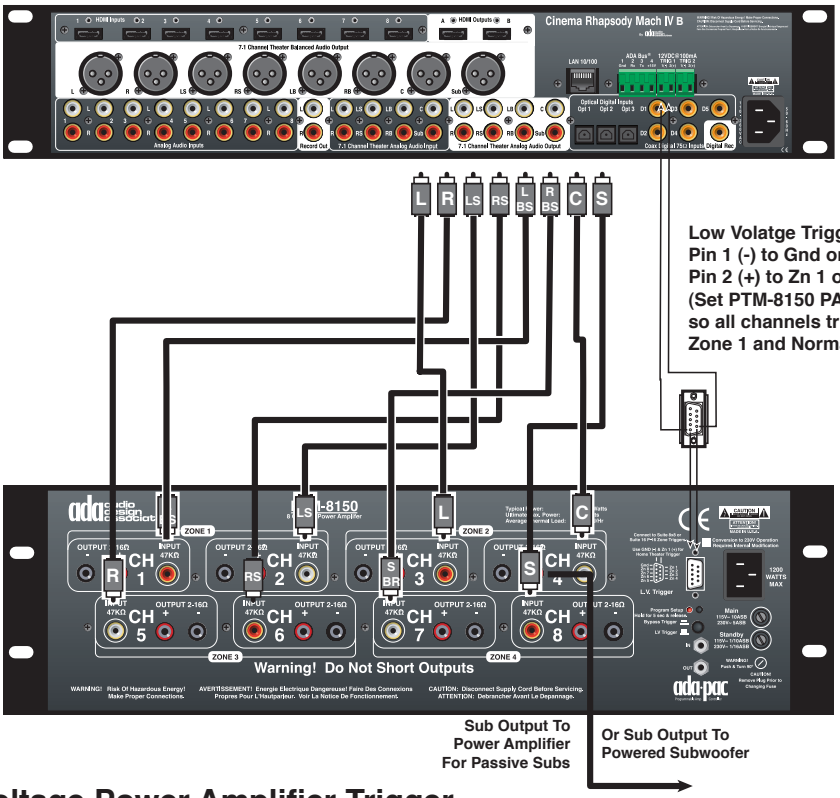
For customers who are using the U.S. standard AC receptacle, you will use the EIC AC Power Cord provided with the Cinema Rhapsody Mach 4. Simply plug this AC cord into an operative AC outlet. For customers who are using a non-U.S. standard AC receptacle, you will need to acquire an EIC AC Power Cord with the appropriate receptacle connector. ADA only provides AC Power Cords with the U.S. standard AC prongs.

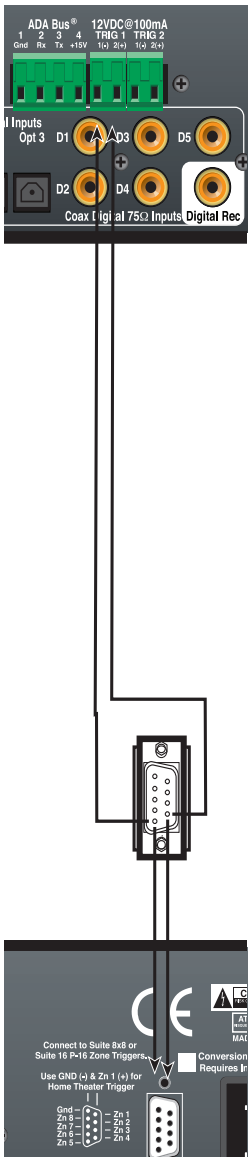


# Power Amplifier (& Powered Subwoofer) Connections

## Audio Connections

The Cinema Rhapsody's Audio Outputs are clearly marked in a white field on the back of the unit. ADA strongly suggests not using directional interconnects that lift the grounds. This diagram includes ADA's PTM-8150 Eight Channel Power Amplifier. While you may decide to vary the input arrangement if you are using a PTM-8150, the following input arrangement will cause the amplifier's front panel LED display to spread outward from Channel 4, the center channel speaker. If you are using a self-powered subwoofer, you will connect the Cinema Rhapsody Mach 4's SUB Output directly to the subwoofer and you may opt to "Y" split the SUB output to illuminate channel eight of the PTM-8150.




## Low Voltage Power Amplifier Trigger

The Cinema Rhapsody Mach 4 features two low voltage triggers that can be used among other things, to turn ADA power amplifiers on and off. Unlike the switched AC outlet, which turns on and off with the Cinema Rhapsody Mach 4, the low-voltage triggers are set to track inputs on the preamplifier. In the setup mode, you can determine if either trigger one or trigger two (or both) engage with that input or not. When triggering a power amplifier using the low voltage triggers, ADA's out of the box setup has Trigger 1 engaging with all inputs.

ADA power with a PAC Module (Programmable Amplifier Controller) permit amplifier channel pairs to be assigned to track independent zone triggers (for use in multi-room systems). The amplifiers can also be set to "Fast Turn On" so that the amplifier can be used for paging (amplifier remains on and charged even when the trigger is off). In a home theater system, zone triggering and fast turn on are not required. If an ADA PAC amplifier is ordered with an ADA home theater preamplifier, the unit will ship with all channel pairs set to trigger with Zn 1. Also, the amplifier will be set to "Normal Turn On" so that when the trigger is removed, the amplifier will turn off completely. Here, the Mach III will also ship with a 9-pin D to two-wire cable that can be terminated to Low Voltage Trigger 1 on the Mach III as shown in the adjacent diagram. Make certain that Low Voltage Trigger Button on the back of the PAC amplifier is in the outward "LV Trigger" position.

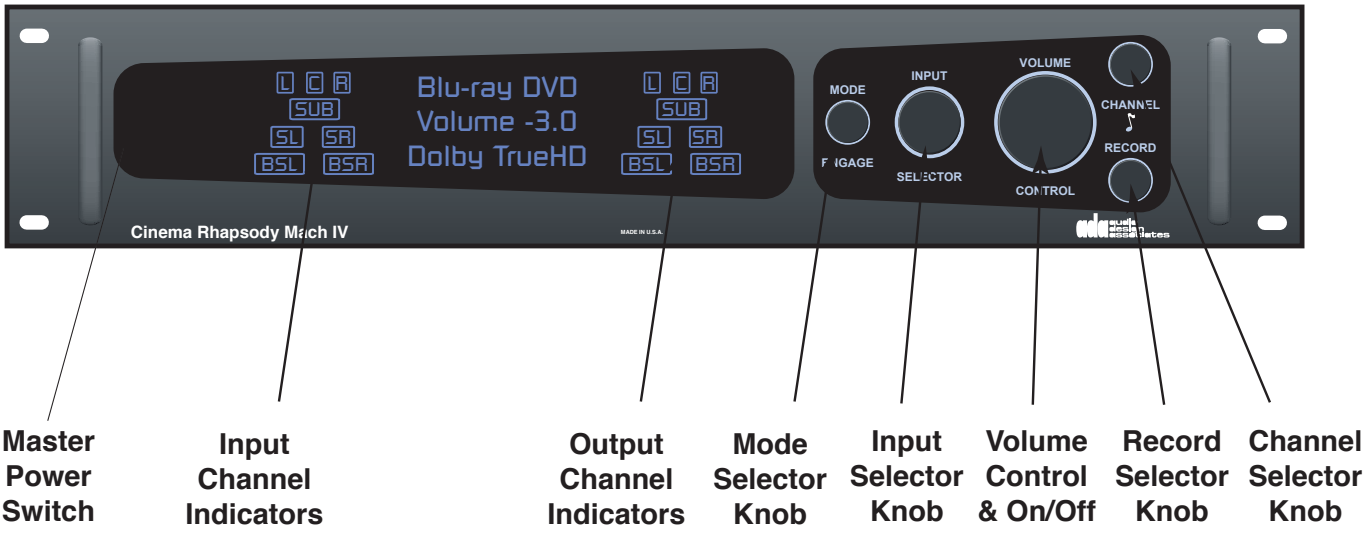
# Introduction - Front Panel Controls & Displays

***Overview***

*The Cinema Rhapsody Mach 4 is factory set for optimum operation. This section details the front panel features of the Cinema Rhapsody Mach 4. All component functions can be operated through the three control knobs located on the units front panel. The front panel displays are also explained in this section.*

**Welcome**

The Cinema Rhapsody Mach 4 is the world's most advanced audio video surround sound preamplifier. **It is also configured "Out Of The Box" for optimum operation.** While it is designed to be easy to setup and operate, ADA strongly recommends spending some time familiarizing yourself with the units many functions and features. For those who wish to customize their home theater system, the Cinema Rhapsody Mach 4 is also equipped to be configured to operate ideally in any environment and with many varying source components. While the connection of components and accessories are discussed in the following sections, this area will explain the front panel features and basic operation commands of the Cinema Rhapsody Mach 4's front panel. The text found in italic type in this manual's margins will act as a quick reference when reviewing these materials.




**Master Power Switch**

**Input Channel Indicators**

**Output Channel Indicators**

**Mode Selector Knob**

**Input Selector Knob**

**Volume Control & On/Off**

**Record Selector Knob**

**Channel Selector Knob**

**Features**

The Cinema Rhapsody Mach 4 acts as both an input selector and surround sound decoder. It is capable of decoding Dolby TrueHD, DTS HD Master Audio, Multi-Channel PCM from sources that connected using an HDMI cable as well as Dolby Pro Logic, Dolby Digital (AC-3), and DTS encoded formats and also provide Lucasfilm THX Ultra 2 enhancements and filters. While the Cinema Rhapsody Mach 4 can automatically detect between Dolby Digital, DTS, Dolby Pro Logic, and Dolby Digital/Dolby Pro Logic (both decoding formats are used when playing two-channel encoded DVD discs {typically older movies available on DVD that are not mixed in six channels}), the option to engage either full THX enhancements or only THX Re-EQ must be manually set on the Cinema Rhapsody Mach 4. The Cinema Rhapsody Mach 4 also provides several additional modes ideal for music playback. There are additional settings that permit the Cinema Rhapsody Mach 4 to also operate in home theaters where a full eight channel speaker array may only be partially implemented (i.e. no back surround and/or no center channel). Furthermore, the Cinema Rhapsody Mach 4 also permits each channel to be set to its own volume level with respect to all other channels as well as have its own delay setting. These features and more are discussed in the upcoming sections.

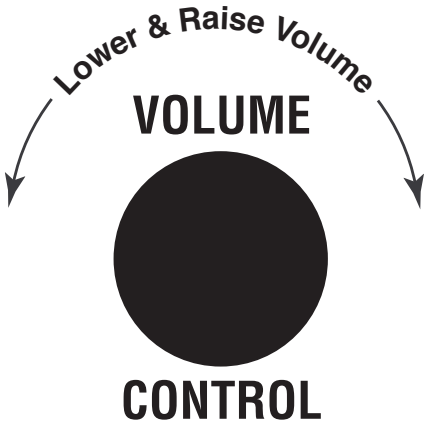
# Power On, Mute, Off, & Master Volume Control

When the Cinema Rhapsody Mach 4 is off, turning any knob or pushing any knob other than the Volume knob will cause the Cinema Rhapsody Mach 4's center LCD display to indicate that you need to push the knob to turn it on.

To turn on the Cinema Rhapsody Mach 4, providing the unit is not in Mute, press the Volume knob once.

Pressing of the Volume knob performs only three functions.

If the unit is off, pressing it will turn it on.
If the unit is on, pressing it will engage Mute.
If the unit is on, pressing and holding it will turn it off.

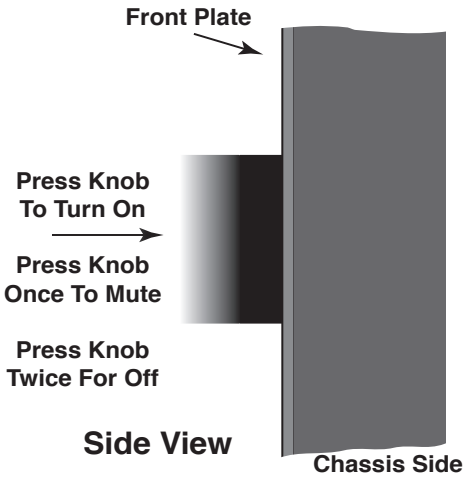



(To regain the audio (exit Mute), turn or press the Volume knob).

Once the Cinema Rhapsody Mach 4 is on, turning the Volume knob will only raise or lower the system's volume level. This is considered the Master Volume Control as it will adjust all eight channels of volume, maintaining the balance of levels that are preset between channels.

### *Power On*

*Press the Cinema Rhapsody Mach 4's Volume knob to engage power on.*




### *Mute*

*While the Cinema Rhapsody Mach 4 is on, pressing it's Volume knob once will mute all channels.*

### *Power Off*

*Pressing and holding the Volume knob will turn the Cinema Rhapsody off.*

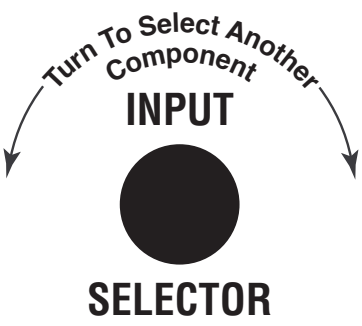
### *Un-Mute*

*While the Cinema Rhapsody is in Mute, turning or pressing the volume knob, will regain audio.*

### *Power On/Off Via AC Control*

*If the Cinema Rhapsody is on when it is unplugged or when power is removed through the use of an AC Controller, it will also automatically turn back on when power is restored.*

# Input Selector

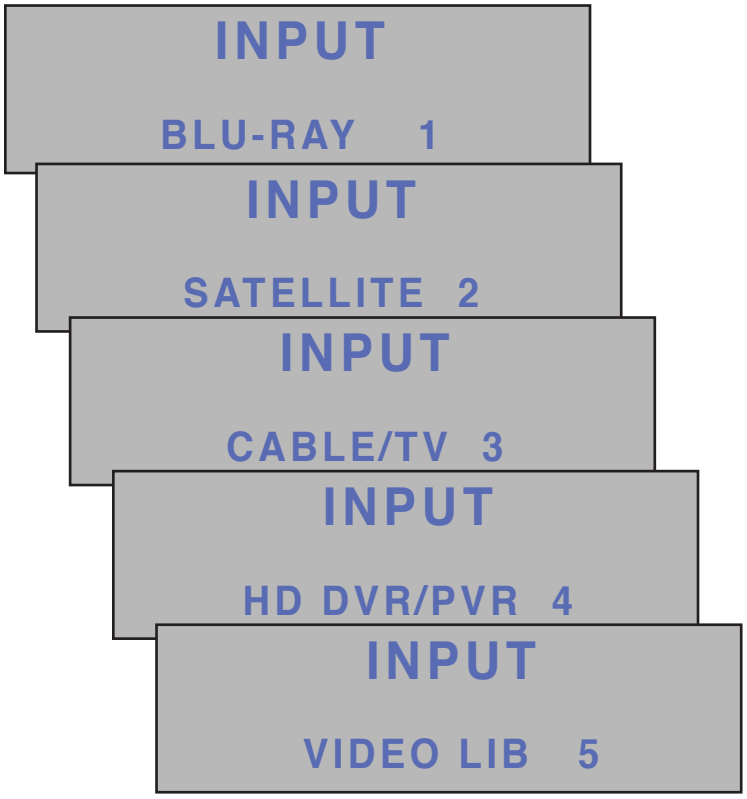



The Cinema Rhapsody Mach 4 permits you to scroll to the next input without having all of the components you are passing actively process through the Cinema Rhapsody Mach 4. This prevents the clicking that is commonly associated with changing TV channels up and down. To best access another component from the front of the Cinema Rhapsody Mach 4, turn the Input Selector knob. As you turn this knob, you will notice that the top row of the LCD display will advance through the input names until the desired component is displayed while the current component in use (in this example, BLUE RAY DVD) remains unchanged in the "Current Input" section.

## Front View

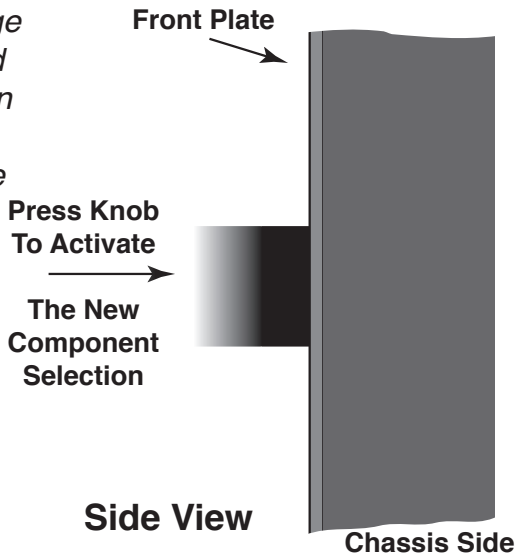
***1 Dial In New Input***

*Turn the Input Selector knob until the top line of the LCD display reads the component you wish to select. As you turn the knob, you will notice that the "Current Input" section of the display still indicates the current source in play. Also, this component is still being routed and processed by the Cinema Rhapsody Mach 4.*



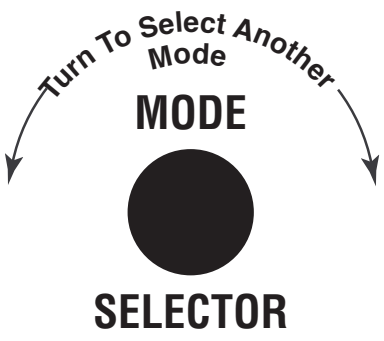

***2 Engage New Input***

*Once the top line of the display indicates the next component you wish to access, press the Input Selector knob to engage this input. This method permits you to select an input without switching all of the inputs you are scrolling through.*

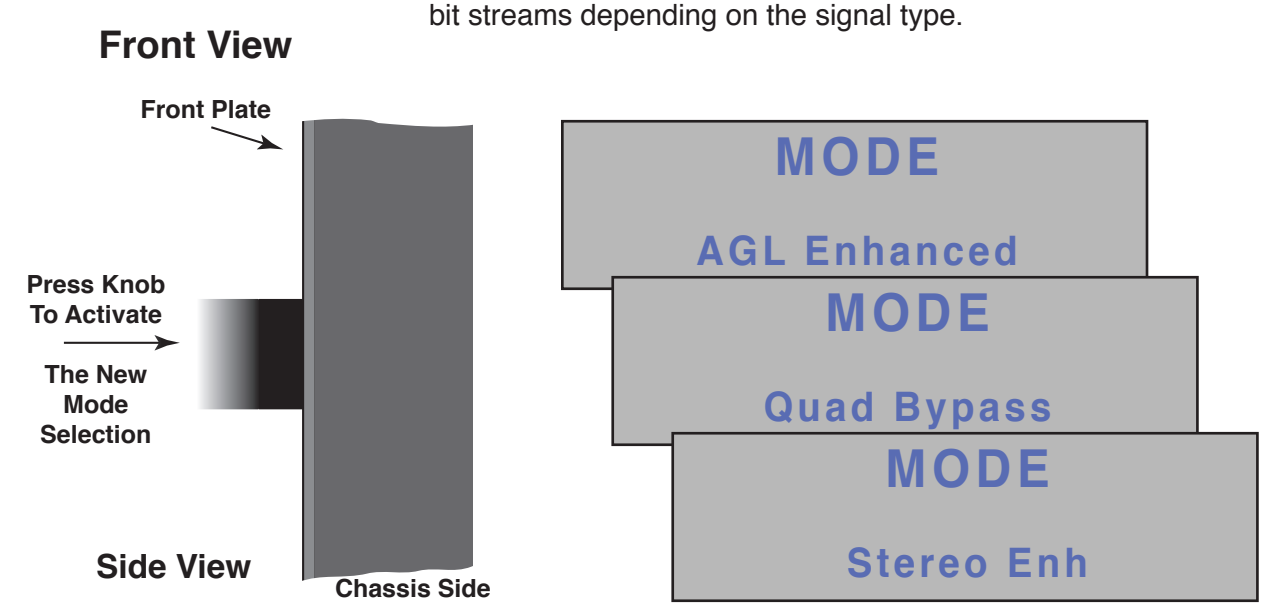



Once the desired component is displayed on the LCD's top row, press the Input Selector knob to engage that component. The display will then return to read the new selection (i.e. Video Game).

# Mode Selector & Mode Descriptions




The Cinema Rhapsody Mach 4 permits you to scroll through available modes without necessarily engaging the mode until you have found the one you wish to use. As you turn the mode knob, the top line of the Cinema Rhapsody Mach 4's display will read the modes available. The lower left-hand of the display indicates the current mode. When the desired mode displayed on the top line, press the Mode knob. The new mode will now engage and its name will display in the lower left-hand corner of the display. The Cinema Rhapsody Mach 4 only displays Multi-Channel Modes when it detects a multi-channel signal present (i.e. 5.1). Otherwise it defaults to just displaying Two-Channel modes. When displaying Multi-Channel modes, note that Direct and Discrete decode DTS or Dolby Digital bit streams depending on the signal type.




**Two-Channel Modes**

| | | |
|---|---|---|
| Direct 2.0 | LF/RF | Two-channel & no audio processing, Fronts speakers Large |
| Stereo | LF/RF/Sw | Two-channel with Subwoofer |
| Mono | C | Center speaker down-mix to mono |

**DTS NEO Audio Stream Processing Algorithm**

| | | |
|---|---|---|
| NEO6 3Channel | LF/RF/C/Sw | Front speakers with subwoofer |
| NEO6 Phantom | LF/RF/LS/RS/Sw | No Center speaker & Center channel to Front Right & Left speakers |
| NEO6 5Channel | LF/RF/C/LS/RS/Sw | No Back Surround Speakers |
| NEO6 Movie | LF/RF/C/LS/RS/LB/RB/Sw | Full Speaker array |
| NEO6 Mve +THX | LF/RF/C/LS/RS/LB/RB/Sw | Full Speaker array with THX filters |
| NEO6 Music | LF/RF/C/LS/RS/LB/RB/Sw | Full Speaker array design for music playback |

**Dolby Pro Logic Audio Stream Processing Algorithm**

| | | |
|---|---|---|
| Pro Logic 3Ch | LF/RF/C/Sw | Front speakers with subwoofer |
| Pro Logic Phan | LF/RF/LS/RS/Sw | No Center speaker & Center channel to Front Right & Left speakers |
| Pro Logic | LF/RF/C/LS/RS/LB/RB/Sw | Full Speaker array |
| Pro Logic +THX | LF/RF/C/LS/RS/LB/RB/Sw | Original Pro Logic with full Speaker array with THX filters |

**Dolby Pro Logic IIx Audio Stream Processing Algorithm**

| | | |
|---|---|---|
| PL2 Matrix | LF/RF/C/LS/RS/LB/RB/Sw | For Mono signals, fills speaker array |
| PL2 Game | LF/RF/C/LS/RS/LB/RB/Sw | For Video Games encoded by Dolby in 2-Channel |
| PL2 Music | LF/RF/C/LS/RS/LB/RB/Sw | For Music - permits adjustment of PLII features |
| PL2 Movie | LF/RF/C/LS/RS/LB/RB/Sw | For Film & TV - Greater spatial separation than PL, full bandwidth |

**Dolby Pro Logic IIx Audio Stream Processing Algorithm (Continued)**

| | | |
|---|---|---|
| PL2 Mve +THX | LF/RF/C/LS/RS/LB/RB/Sw | Adds THX filters to Pro Logic 2 Movie |
| PL2 Custom | LF/RF/C/LS/RS/LB/RB/Sw | Custom settings for Pro Logic 2 Movie - permits adjustment of PL II |
| PL2 Cstm1 +THX | LF/RF/C/LS/RS/LB/RB/Sw | Adds THX filters to PL Custom mode (above) |
| PL2 Custom 2 | LF/RF/C/LS/RS/LB/RB/Sw | Custom 2 settings for Pro Logic 2 Movie - permits adjustment of PL IIPL2 |
| Cstm2 +THX | LF/RF/C/LS/RS/LB/RB/Sw | Adds THX filters to PL Custom mode (above) |
| PL2 Custom 3 | LF/RF/C/LS/RS/LB/RB/Sw | Custom 3 settings for Pro Logic 2 Movie - permits adjustment of PL IIPL2 |
| Cstm3 +THX | LF/RF/C/LS/RS/LB/RB/Sw | Adds THX filters to PL Custom mode (above) |

**ADA Proprietary Modes (ADA's Favorites)**

| | | |
|---|---|---|
| AGL Enhanced | LF/RF/C/LS/RS/LB/RB/Sw | Based on Pro Logic, AGL is an auto-sensing 2-channel mode |
| Quad Bypass | LF/RF/C/LS/RS/LB/RB/Sw | For Music - Creates excellent music image using full speaker array |
| Stereo Enh | LF/RF/C/LS/RS/LB/RB/Sw | For Stereo Signals - Simulated surround w/control of room size |
| Mono Enh | LF/RF/C/LS/RS/LB/RB/Sw | For Mono Signals - Simulated surround w/control of room size |
| Stereo 5 | LF/RF/C/LS/RS/LB/RB/Sw | Distributes stereo to entire speaker array |
| Mono 5 | LF/RF/C/LS/RS/LB/RB/Sw | Distributes mono to entire speaker array |

**Room Simulation Modes with Reverb Customization**

| | | |
|---|---|---|
| Cinema | LF/RF/C/LS/RS/LB/RB/Sw | For Film - Uses the entire speaker array |
| Club | LF/RF/C/LS/RS/LB/RB/Sw | For Music - Uses the entire speaker array |
| Hall | LF/RF/C/LS/RS/LB/RB/Sw | For Music - Uses the entire speaker array |
| Arena | LF/RF/C/LS/RS/LB/RB/Sw | For Music - Uses the entire speaker array |
| Cathedral | LF/RF/C/LS/RS/LB/RB/Sw | For Music - Uses the entire speaker array |
| Quad Reverb | LF/RF/C/LS/RS/LB/RB/Sw | For Music - Uses the entire speaker array |

**Multi-Channel Modes**

| | | |
|---|---|---|
| Direct 7.1 | LF/RF/C/LS/RS/LB/RB/Sw | 7.1 direct from source, LFE but no bass management |
| Dnmix Stereo | LF/RF/Sw | 2 Channel downmix with subwoofer |
| Dnmix Mono | C | 2 Channel downmix to mono with Center speaker & Subwoofer |
| Dnmix 3Channel | LF/RF/C/Sw | 2 Channel downmix to Front speakers & Subwoofer |
| Dnmix Phantom | LF/RF/Sw | 2 Channel downmix to Front right & left speakers and Subwoofer |

**Ideal Modes for DTS or Dolby Digital Signals**

| | | |
|---|---|---|
| Discrete | LF/RF/C/LS/RS/LB/RB/Sw | DTS or Dolby Digital 7.1 direct from source with bass management |
| Discrete +THX | LF/RF/C/LS/RS/LB/RB/Sw | Above Mode with THX Enhancements |
| Discrete EX/ES | LF/RF/C/LS/RS/LB/RB/Sw | Same as Discrete but uses DTS ES or DD EX flags |
| THX Surr EX/ES | LF/RF/C/LS/RS/LB/RB/Sw | Above Mode with THX Enhancements |

**DTS NEO Audio Stream Processing Algorithm**

| | | |
|---|---|---|
| NEO6 Movie | LF/RF/C/LS/RS/Sw | Downmix to 2-Channel & then processed via NEO6 Matrix |
| NEO6 Mve +THX | LF/RF/C/LS/RS/Sw | Above Mode with THX Enhancements |
| NEO6 Music | LF/RF/C/LS/RS/Sw | Downmix to 2-Channel & then processed via NEO6 Music Matrix |

**Dolby Pro Logic Audio Stream Processing Algorithm**

| | | |
|---|---|---|
| PL2x Movie | LF/RF/C/LS/RS/LB/RB/Sw | Downmix to 2-Channel & then processed via PL II Movie Matrix |
| PL2x Mve +THX | LF/RF/C/LS/RS/LB/RB/Sw | Above Mode with THX Enhancements |
| PL2x Music | LF/RF/C/LS/RS/LB/RB/Sw | Downmix to 2-Channel & then processed via PL II Music Matrix |

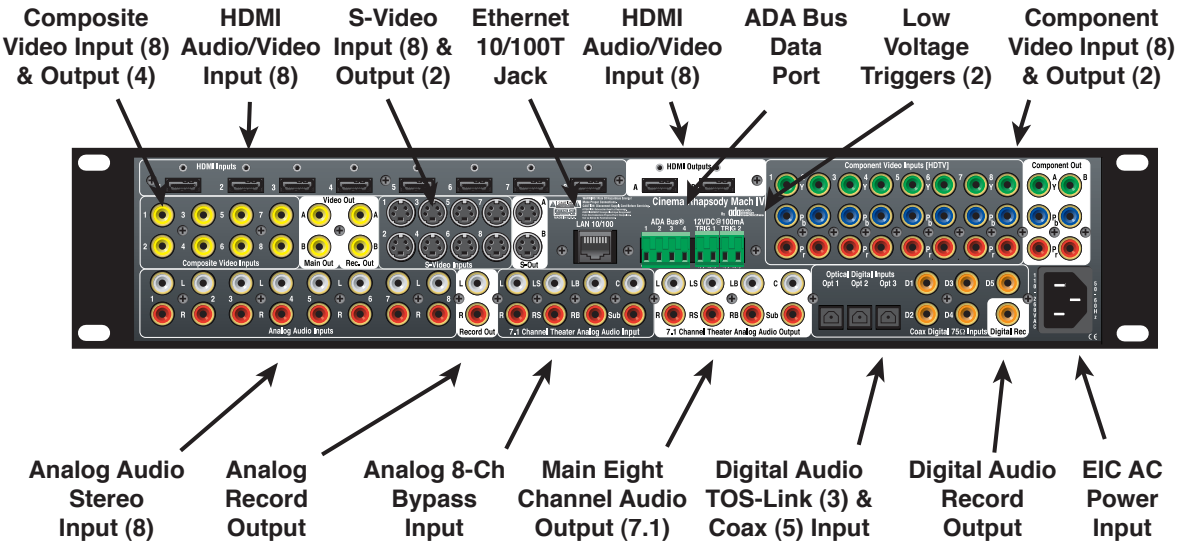
**THX Modes**

| | | |
|---|---|---|
| THX Ultra2 Mve | LF/RF/C/LS/RS/LB/RB/Sw | For Film - 7.1 direct from source with THX Ultra 2 Enhancements |
| THX Ultra2 Gme | LF/RF/C/LS/RS/LB/RB/Sw | For Games - 7.1 direct from source w/THX Ultra 2 Enhancements |
| THX Ultra2 Msc | LF/RF/C/LS/RS/LB/RB/Sw | For Music - 7.1 direct from source w/THX Ultra 2 Enhancements |

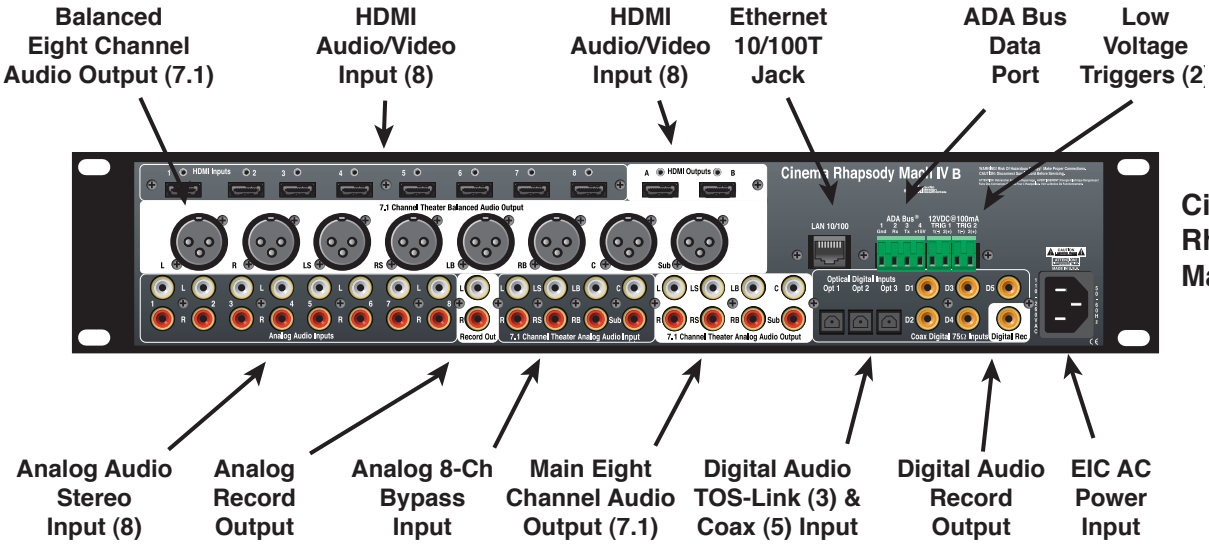
**Room Simulation Modes**

| | | |
|---|---|---|
| Dmx Cinema | LF/RF/C/LS/RS/LB/RB/Sw | Downmix to 2-Channel then Cinema mode with Reverb |
| DmxClub | LF/RF/C/LS/RS/LB/RB/Sw | Downmix to 2-Channel then Club Mode with Reverb |
| DmxHall | LF/RF/C/LS/RS/LB/RB/Sw | Downmix to 2-Channel then Hall Mode with Reverb |
| DmxArena | LF/RF/C/LS/RS/LB/RB/Sw | Downmix to 2-Channel then Arena Mode with Reverb |
| DmxCathedral | LF/RF/C/LS/RS/LB/RB/Sw | Downmix to 2-Channel then Cathedral Mode with Reverb |
| DmxQuadReverb | LF/RF/C/LS/RS/LB/RB/Sw | Downmix to 2-Channel then Quad Mode with Reverb |

# Rear Panel Connections


Composite Video Input (8) & Output (4)
HDMI Audio/Video Input (8)
S-Video Input (8) & Output (2)
Ethernet 10/100T Jack
HDMI Audio/Video Input (8)
ADA Bus Data Port
Low Voltage Triggers (2)
Component Video Input (8) & Output (2)
Analog Audio Stereo Input (8)
Analog Record Output
Analog 8-Ch Bypass Input
Main Eight Channel Audio Output (7.1)
Digital Audio TOS-Link (3) & Coax (5) Input
Digital Audio Record Output
EIC AC Power Input

Cinema Rhapsody Mach 4


Balanced Eight Channel Audio Output (7.1)
HDMI Audio/Video Input (8)
HDMI Audio/Video Input (8)
Ethernet 10/100T Jack
ADA Bus Data Port
Low Voltage Triggers (2
Analog Audio Stereo Input (8)
Analog Record Output
Analog 8-Ch Bypass Input
Main Eight Channel Audio Output (7.1)
Digital Audio TOS-Link (3) & Coax (5) Input
Digital Audio Record Output
EIC AC Power Input

Cinema Rhapsody Mach 4-B

# Out of the Box Input Configuration

The "Out of the Box" input configuration is easy to follow and offers connection of as many as 20 components without adjustment of the Cinema Rhapsody Mach 4's input configurations (providing that the sources have the appropriate outputs). Below is a chart showing the Cinema Rhapsody Mach 4's 20 "input labels" and the assignment of the HDMI (audio & video signal) and audio jacks on the rear panel of the unit. Also shown here are the default surround sound modes for the respective inputs when playing 5.1 or 2 channel material.

| INPUT # | INPUT LABEL | VIDEO INPUT | AUDIO INPUT | COMPOSITE VIDEO INPUT | S-VIDEO INPUT | COMPONENT VIDEO INPUT | DC LOW VOLTAGE 1 | DC LOW VOLTAGE 2 | DEFAULT 5.1 | DEFAULT 2.0 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | BLU-RAY DVD | HDMI 1 | HDIMI | 1 | 1 | 1 | ON | ON | DISCRETE+EX/ES | PLII MOVIE |
| 2 | SATELLITE | HDMI 2 | HDMI | 2 | 2 | 2 | ON | ON | DISCRETE+EX/ES | PLII MOVIE |
| 3 | CABLE/TV | HDMI 3 | HDMI | 3 | 3 | 3 | ON | ON | DISCRETE+EX/ES | PLII MOVIE |
| 4 | HD DVR/PVR | HDMI 4 | HDMI | 4 | 4 | 4 | ON | ON | DISCRETE+EX/ES | PLII MOVIE |
| 5 | VIDEO SERVER | HDMI 5 | HDMI | 5 | 5 | 5 | ON | ON | DISCRETE+EX/ES | PLII MOVIE |
| 6 | VIDEO GAME | HDMI 6 | HDMI | 6 | 6 | 6 | ON | ON | THX GAMES | PLII GAME |
| 7 | HD VCR | HDIM 7 | HDMI | 7 | 7 | 7 | ON | ON | DISCRETE+EX/ES | PLII MOVIE |
| 8 | HD CAMERA | HDMI 8 | HDMI | 8 | 8 | 8 | ON | ON | DISCRETE+EX/ES | PLII MOVIE |
| 9 | IPOD DOCK | OFF | ANALOG 1 | Off | Off | Off | ON | OFF | THX MUSIC | QUAD BYPASS |
| 10 | RADIO TUNER | OFF | ANALOG 2 | Off | Off | Off | ON | OFF | THX MUSIC | QUAD BYPASS |
| 11 | MULTI-ROOM | OFF | ANALOG 3 | Off | Off | Off | ON | OFF | THX MUSIC | QUAD BYPASS |
| 12 | PHONOGRAPH | OFF | ANALOG 4 | Off | Off | Off | ON | OFF | THX MUSIC | QUAD BYPASS |
| 13 | CD PLAYER | OFF | OPTICAL 1 | Off | Off | Off | ON | OFF | THX MUSIC | QUAD BYPASS |
| 14 | COMPUTER | OFF | OPTICAL 2 | Off | Off | Off | ON | OFF | THX MUSIC | QUAD BYPASS |
| 15 | MUSIC SERVER | OFF | DIGITAL 1 | Off | Off | Off | ON | OFF | THX MUSIC | QUAD BYPASS |
| 16 | DVD AUDIO | OFF | DIGITAL 2 | Off | Off | Off | ON | OFF | THX MUSIC | QUAD BYPASS |
| 17 | SACD PLAYER | OFF | DIGITAL 3 | Off | Off | Off | ON | OFF | THX MUSIC | QUAD BYPASS |
| 18 | DAT PLAYER | OFF | DIGITAL 4 | Off | Off | Off | ON | OFF | THX MUSIC | QUAD BYPASS |
| 19 | LASER AC-3 | OFF | DIGITAL 5 | 1 | 1 | Off | ON | ON | DISCRETE+EX/ES | PLII MOVIE |
| 20 | LASER DTS | OFF | DIGITAL 6 | 1 | 1 | Off | ON | ON | DISCRETE+EX/ES | PLII MOVIE |

# Custom Input Configuration

The Cinema Rhapsody Mach 4 is an incredibly flexible home theater controller that can accommodate a wide array of components. For easy and quick setup, one can use the “Out of the Box” input configuration. One can also elect to do a completely “Custom Input” configuration or a combination of “Out of the Box” and “Custom Input” configurations.

There are several Cinema Rhapsody Mach 4 features specific to each input including:

**Input Labeling** - The ability to rename input labels to match more closely a specific setup. For example, you can relabel the input labeled SATELLITE to read DSS SAT. You need to limit the input label to 12 characters including spaces, symbols and numbers. ADA strongly suggests that as you rename inputs, you maintain their numeric reference (i.e. the 3 in CABLE/TV **3**). From a control standpoint, this will make it easier to maintain a link between the input and the input command.

**Final Input** - The ability to reduce from 20, the number of input labels seen turning the input knob. If you have say only six components, you can limit the Final Input number to read 6. Please note that this eliminates the display from showing input labels 7-20. If you had an input label that you wanted to use above input label 6 (i.e. MULTI-ROOM), you would relabel one for the first six inputs to read MULTI-ROOM. Obviously, you may also need to re-assign input jacks (see below).

**AV Input Jack Assignment** - The ability to have HDMI & audio input jacks track input labels as they are selected. If you are assigning an AV source using an HDMI input, you can opt to route the audio via the HDMI input or alternately, via an analog or digital audio input. Typically you will select HDMI for the audio input as this permits the Suite 7.1 to process the high-resolution audio formats (Dolby TrueHD, DTS-HD Master Audio, or multi-channel PCM). For audio only sources (analog or digital), you can turn the HDMI input OFF or alternately, you can select a specific video input. For example, if while listening to the music playing in the multi-room system you wish to also watch the video image of the satellite receiver (a sporting event), you could have the Satelllite’s HDMI jack track the audio from the Multi-Room input.

**Default Modes** - When an input is selected, pre-assigned modes for 5.1 or 2 channel audio automatically engage. This way, the best possible mode always engages.

**Input Presets** - There are a total of six features that can be engaged when an input is selected. These include a starting volume preset, balance preset (includes levels and delays), tone preset, parametric equalizer (PEQ) preset, and speaker preset which includes active speakers, whether they roll-off and their roll-off frequency. The last feature involves setting an audio delay for that input.

**HDMI Downmix** - The ability to have the TV play audio via its internal speakers.

While you can limit the number of inputs to just the number of sources that are connected (using Final Input) and then rename (Input Labeling), re-link the sources (AV Input Jack Assignment), and assign surround modes (Default Modes), the ability to custom label inputs has other benefits.

For example, if the DVD player is used for both film and music playback, you could create an input label called DVD FILM and a second input label called DVD MUSIC. While both labels would access the same AV Input Jack, you could then set a set of Default Modes for DVD FILM that were film like (i.e. DISCRETE+EX/ES & PLII MOVIE) while the Default Modes for DVD MUSIC were set to THX MUSIC and QUAD BYPASS. This way, the user simply selects the appropriate input and does not think about then selecting modes. Note that if you are going to use multiple input labels for one or more sources, your Final Input number will need to be increased.

# Setup - Entering & Navigation

The Cinema Rhapsody Mach 4 can be setup using either the unit's front panel display and knobs or by using the Cinema Rhapsody Mach 4 PC Program.

ADA strongly suggests using the PC program when ever possible as it is more intuitive.

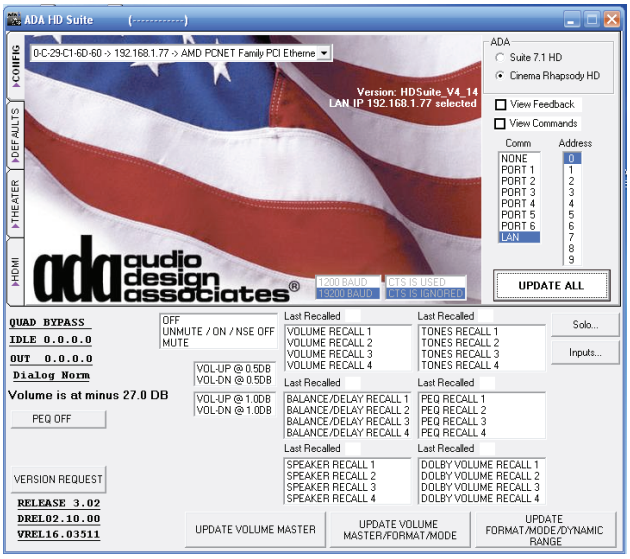
When setting up the Cinema Rhapsody Mach 4 from its front panel, the Mode, Input and Volume knobs are used to move the display's cursor and to make changes or selections.

To enter the Setup mode on the front of the Cinema Rhapsody Mach 4, press and hold the Mode knob. The display will change to the primary Setup Mode Screen. Here you can recall Tone, Balance and Volume presets.

Turn the Mode knob to the desired recall feature and then turn the Input knob until the appropriate preset number appears. Pressing the Input knob will Recall that preset.

From the Setup page you can also set the Cinema Rhapsody Mach 4's pararmetric tone control, speaker balance, volume setup, parametric EQ as well as entering the Pro Setup mode.

To exit the Setup mode from any page, navigate the cursor to Main and press the Mode knob.



# Customizing Virtual Inputs

The Cinema Rhapsody Mach 4 features 20 virtual inputs that can be limited in number, renamed, re-assigned to different AV jacks, carry default modes along with recalling presets for volume, balance (with delay), tone, parametric EQ, speaker configuration, and even audio delay.

While each input label is unique, several input labels can be set to access the same source. For example, an input labeled DVD FILM and another labeled DVD MUSIC would access the same DVD player but simply engage different sound fields ideally suited for viewing the movies or listening to music. As an input is selected, the following Cinema Rhapsody features can be accessed.

Default Modes - Set an ideal mode for both 2 channel audio detection and multi-channel audio detection.

Volume Preset - Recall one of four volume presets or simply remain on the last used volume.

Balance Preset - Recall one of four balance presets that also store delay levels or simply remain on the last used setting.

Tone Presets - Recall one of four balance presets or simply remain on the last used setting.

PEQ Presets - Recall one of four parametric EQ presets or remain on the last used setting.

Speaker Presets - Recall one of four speaker configuration presets or simply use the current speaker configuration (last used).

Dolby Volume Presets - Recall one of four Dolby Volume presets or last used.

Delay - Measured in mili-seconds (up to 200) this feature permits you to time align sources. This is in addition to the global Lip Sync Delay.

From a hardware standpoint, while all other settings occur in real-time in the Cinema Rhapsody Mach 4, these features are loaded into the motherboard of the unit. Even the front panel control head acts only like an external interface (like the PC program). Once you have made adjustments on it, you will still need to "load" these settings into the Cinema Rhapsody Mach 4's motherboard.

Before proceeding with the custom setup of your Cinema Rhapsody Mach 4, it is worth taking some time to consider just how you intend to use your system. Some considerations include:

Is your system going to be used solely for film playback or are you going to also use it to play music?

If you are going to use it for music, do you want to use the same speaker configuration as for theater or do you prefer operating the system in just two-channel mode?

If you are using the system to view TV, are there times when you wish to defeat surround sound such as when viewing the news?

Are you using your DVD player for both DVD movies and music CDs?

Obviously there are many other possible considerations. These are here to simply illustrate just how flexible the Cinema Rhapsody Mach 4 is. In the end, the goal of the optimum setup is to make operating the Cinema Rhapsody Mach 4 as easy as selecting an input.

**Example 1: Using the DVD player for both flim and music.**

Here you could opt to create an input labeled DVD FILM and another labeled DVD MUSIC. Both inputs would access the same jacks. The difference between these two virtual inputs could include default modes, starting volume level, balance levels, tone settings, and parametric EQ settings. As such, when inserting a DVD into your player, all you do is select the DVD FILM input. When you insert a CD, select DVD MUSIC. All other settings then engage automatically.

**Example 2: Using your speaker system for both 7.1 (or 5.1) surround sound and strict 2-channel stereo.**

When going to a source you want to play in just stereo (CD STEREO), you could recall a speaker preset that includes just the right and left front speakers without any roll-off. You could also bypass modes and change the starting volume level, balance level and perhaps flatten tones and parametric EQ levels.

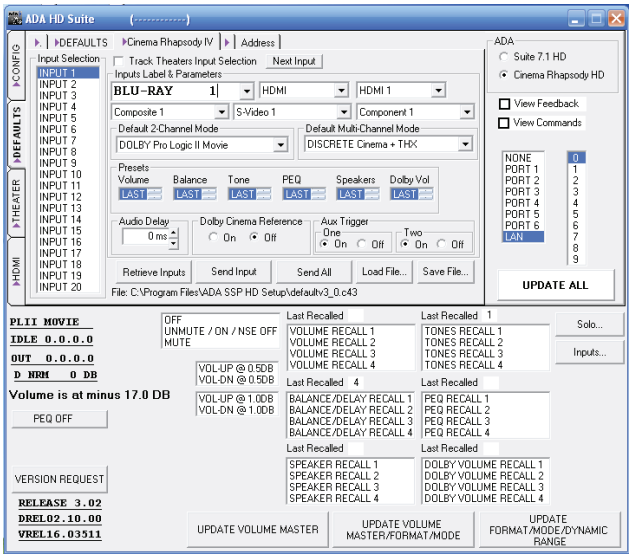
# Inputs Labels

Once on the Setup screen, navigate to the LABELS/AV setup feature, by turning the Mode knob until the cursor is PRO SETUP and then press the Mode knob.

The first option will be the LABELS/AV option. Press the Mode knob again. Note that these pages also feature a PREV arrow pointing left (Previous page). If you wish to return to the prior screen, navigate the cursor using the Mode knob until it rests on this arrow and press the Mode knob. Doing the same on the left MAIN arrow exits setup.

The Cinema Rhapsody Mach 4 features 20 input labels or virtual inputs. The Factory Default features 20 input labels. Features discussed in this section include:

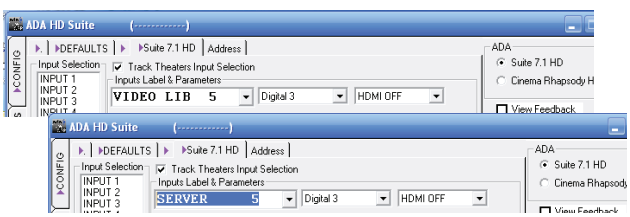
FINAL INPUT - Lowering the number of visible inputs that are displayed as you turn the input knob. Please note the PC program does this elsewhere.
LABEL - Customizing the name of the input.
AUDIO - Linking the rear panel audio jack.
VIDEO - Linking the rear panel HDMI jack.
N - Setting up Input Presets
LOAD - Loading the settings. While most functions take place in real time with the Cinema Rhapsody Mach 4, this set of functions do not and must be loaded (the final step).




While on INPUT, turning the Mode knob advances through other Input Labels. If we are looking to relabel Input 5 “VIDEO LIB 5” to read “SERVER 5”, turn the Mode knob until the screen reads INPUT 5.

Turn the Mode knob so that the cursor is on LABEL and press the Mode knob. Now, turning the Mode knob positions the cursor on a character and turning the Input knob changes the character. If you want to exit out of this feature, turn the Mode knob to SAVE and press the Mode knob. ADA Strongly recommends keeping the numeric suffix (i.e. 5) as it reminds you of the control code or IR code that accesses this input.

In the PC program, simply select the input on the left and then highlight the input name and type in the new input name.



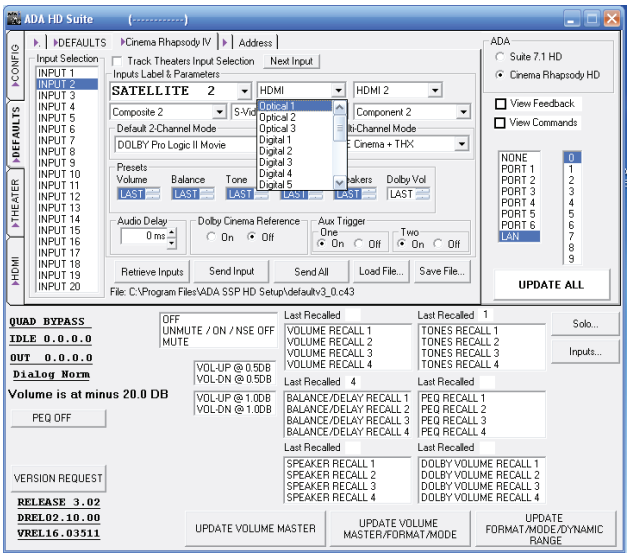
# Audio Input Jack Assignment

The Cinema Rhapsody Mach 4 makes it possible to assign any audio and video jack to an Input Label. For audio, there are:

3 TOS-Link Optical inputs,
5 digital coax inputs
8 analog audio inputs
An 8-channel bypass input
8 HDMI inputs (A/V)

When using an HDMI interconnect, you may still opt to use any one of the other audio inputs. If you want to extract the audio for that source from the HDMI input used for video, instead of selecting a digital or analog audio input, select HDMI. The Input Label will then select the audio associated to the HDMI input.

To change the Audio Input, first select the input you wish to setup. With the cursor on the I in INPUT, turn the input knob until the desired INPUT # is displayed. The turn the Mode knob so that the cursor is under the letter A in Audio. Turn the Input knob until the connection you require is displayed. In this example, we want to alter the SATELLITE input from HDMI to OPTICAL 1.




In the PC program, pull down on the first window to the left of the Input Label (source name) and select the audio jack.

**Note** - If you are looking to extract audio present on the HDMI cable, the audio option must be HDMI.

**Note** - Changes are not effected until you have performed a LOAD.

To assign audio jacks for other Input Labels, turn the Mode knob so that the cursor is sitting under the I in the word INPUT. Then turn the Input Knob to select the desired input number. Repeat the above steps.

Since several other features also need to be “loaded” it is useful to set these first. As such, you will save time loading parameters such as Video Input Jack Assignment, Input Presets, and Default Modes. If you do not intend to change these other settings and wish to simply Load the Input Labels now, proceed to Loading Input Parameters.

# Video Input Jack Assignment

While the Cinema Rhapsody Mach 4 tracks only one audio input per input label, it is capable of assigning a composite video, S-Video, component video and HDMI video input to each input label (not available on the Cinema Rhapsody Mach 4-B, HDMI video only).

When using an external video processor (scaler), you can still run all sources' video through the Cinema Rhapsody Mach 4 by connecting the appropriate video outputs to the video processor you are using. The HDMI video output of the processor is then connected to a single HDMI input on the Cinema Rhapsody Mach 4. As you select inputs on the Cinema Rhapsody Mach 4, the non-HDMI video is sent to video processor, the corresponding audio signal is processed in the Cinema Rhapsody, and video processor's output (HDMI) is routed back into the Cinema Rhapsody and then out to the display(s).

To change the Video Input, first select the input you wish to setup. With the cursor on INPUT, turn the input knob until the desired INPUT # is displayed. Then turn the Mode knob the video connection you wish to alter. To change the Video Input, turn the Input knob and the screen will advance through the options (including OFF if not used).

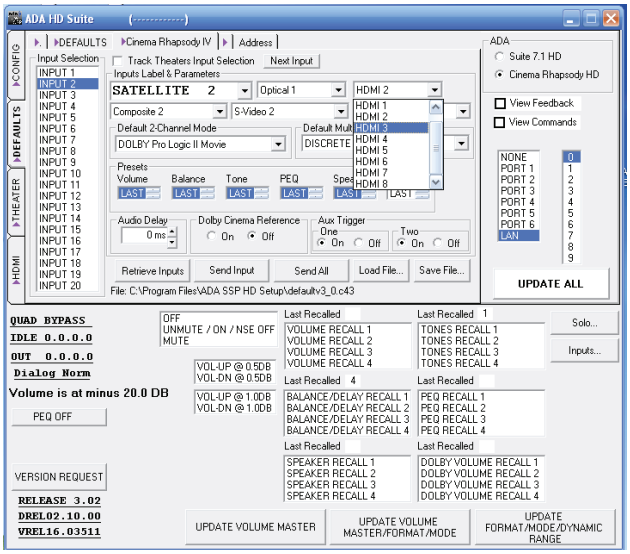
Remember that in order to play the audio off the HDMI cable, HDMI needs to be selected as the Audio Input.

In the PC program, pull down on the first window to the left of the Input Label (source name) and select the video (HDMI) jack.

**Note** - If your source is audio only connected via an analog, coaxial or TOS-Link cable, set the HDMI video input to OFF.

**Note** - Changes are not effected until you have performed a LOAD.

Since several other features also need to be "loaded" it is useful to set these first. As such, you will save time loading parameters such as Input Presets and Default Modes. If you do not intend to change these other settings and wish to simply Load the Input Labels now, proceed to Loading Input Parameters.



# Input Presets

The Cinema Rhapsody Mach 4 has the ability to engage certain feature sets when an input is selected. One of these is:

Auto Delay - Rated in milliseconds (0-200).

In addition to setting the Audio Delay, you can also assign one of four inputs for each of the following.

Volume - The volume preset lets you assign a starting volume level for a specific input. If the unit is off and an input with a specific volume preset is selected, the Turn On volume preset is ignored and this input specific volume preset is used.

Balance - The balance preset stores channel levels and delay levels.

Tone - The tone preset stores the parametric bass and treble control.

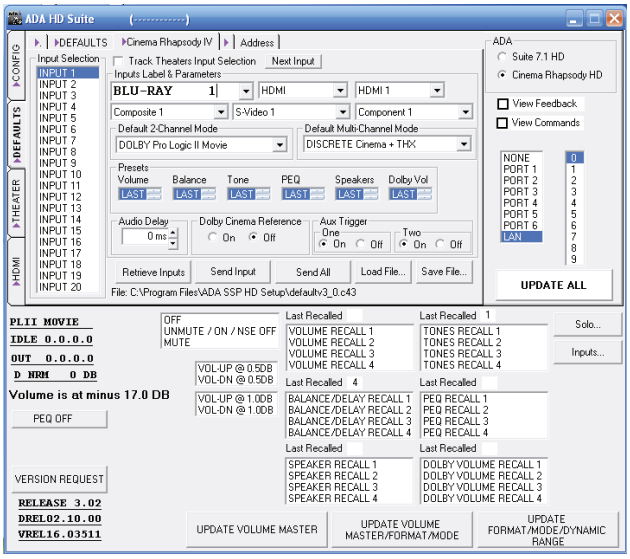
PEQ - The multi-band parametric equalizer features a 12 band EQ for all channels and an 8 band EQ for the subwoofer.

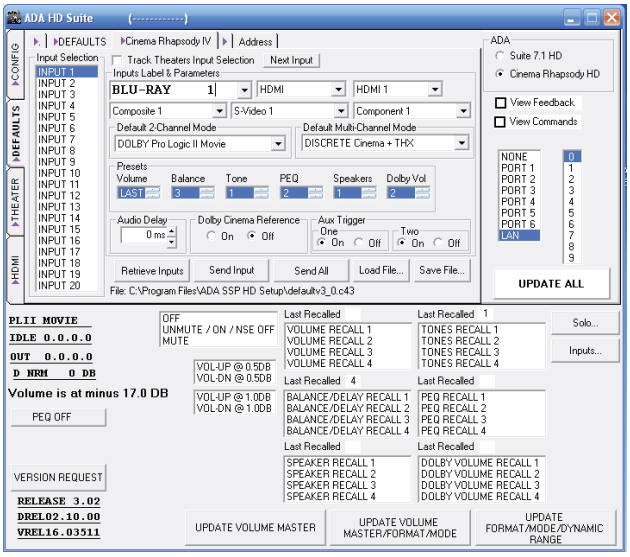
Speakers - The speaker configuration lets you determine which speakers are active, whether they roll-off, and their roll-off frequency.

Dolby Volume - The Dolby Volume preset can be recalled automatically per input.

To change these settings you must use the PC program.

**Note** - Changes are not effected until you have performed a LOAD.



# Default Modes

The Cinema Rhapsody Mach 4 features ADA's unique Double Default Mode Auto-Detection that automatically engages a surround sound mode for each input - one for 7.1/5.1 and another for 2 channel audio. This way, regardless of what mode was last used, the right decoding takes place each time an input is selected. Default Modes are loaded to the Cinema Rhapsody Mach 4 along with the Input Labels, AV Input Jack Assignments and Input Presets. As such, before loading it is suggested that you set the Default Modes for the Input Labels you have created or modified.

While the PC program permits assignment of the Default Modes on the same page as other input assignments, this feature is located elsewhere in the Cinema Rhapsody Mach 4's menu.

To set the Default Modes, if you are still on the LABELS/AV screen, turn the Mode knob so that the cursor is on PREV (previous page) and press the Mode knob.

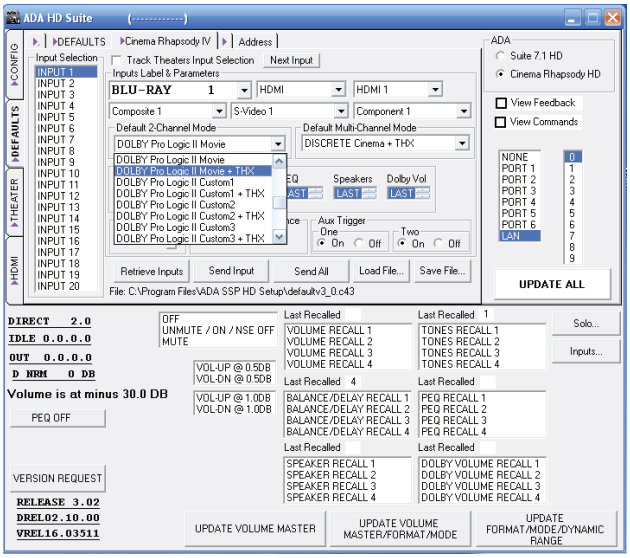
Turn the Mode knob so that the cursor is on POWER UP and press the Mode knob.

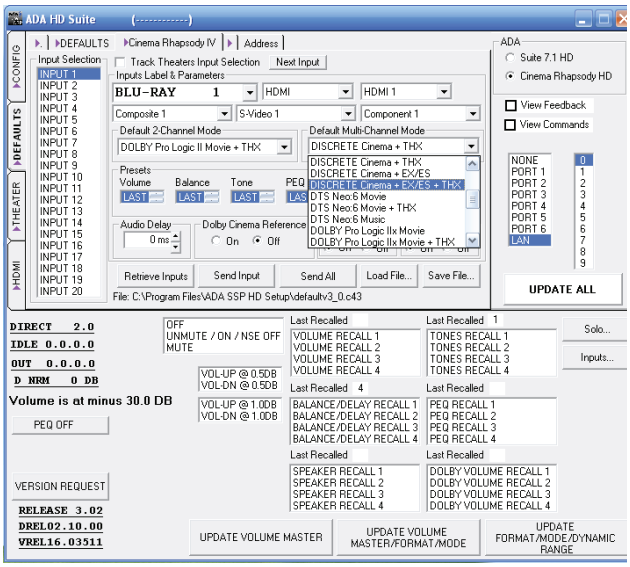
Turn the Mode knob so that the cursor is on DFLT MODES and press the Mode knob.

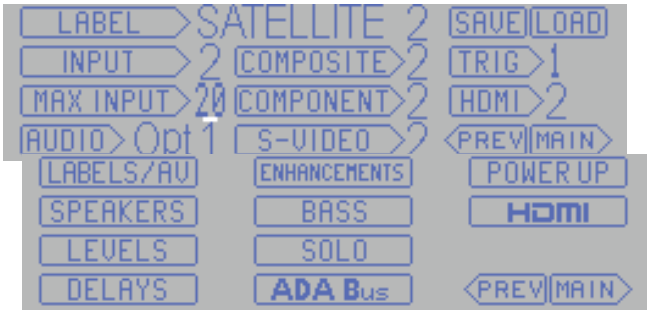
With the cursor is on INPUT, you can scroll through inputs by turning the Input knob. If you have altered Input Label names (regardless whether you loaded the Cinema Rhapsody Mach 4), the new Input Label names will appear on the screen because the control head on the unit already contains the changes even though the Cinema Rhapsody Mach 4 does not.

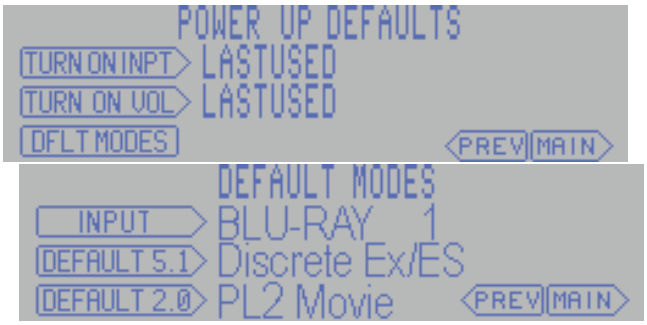
When you are on the desired input label, turn the Mode knob to select DEFAULT 5.1 and DEFAULT 2.0. While on either of these features, the Input Knob lets you change the Default Mode for that input. Please note that "LAST USED" mode is an option. For other inputs, navigate back to the INPUT using the Mode Knob and then selecting another input using the Input knob and repeat.

When you are done, return to the LABELS/AV screen by PREV (previous screen) both on this page and the POWER UP screen. You will then be able to select the LABELS/AV page from where you can LOAD these settings.



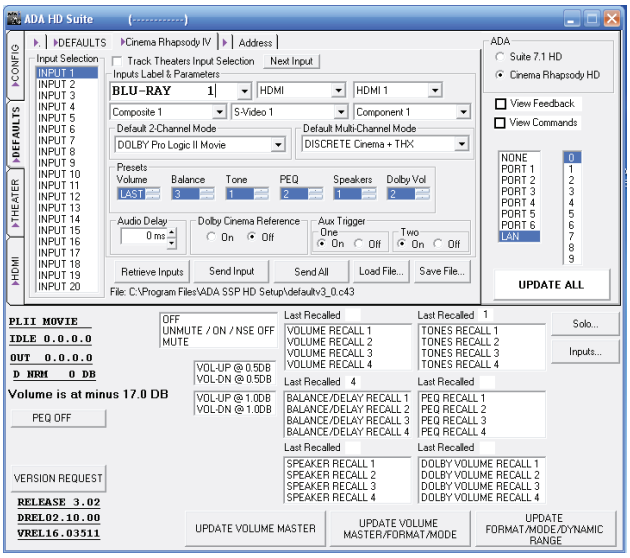



# DC Triggers & Loading Custom Input Configurations

As a reminder to how the Cinema Rhapsody Mach 4 operates, when you adjust most every feature on the unit, the changes occur in real time (immediately). That is not the case when it comes to labeling of inputs, assigning AV jacks, altering input presets, assigning DC trigger operation, or changing default modes.

For these specific features, you must load them into the Cinema Rhapsody Mach 4. Even if you are adjusting them on the front panel control, these changes are only being held in the front panel control and have not yet been loaded into the motherboard. As such, the front panel control works much like the PC program which also needs to be “loaded” into the Cinema Rhapsody Mach 4.

When using the PC program, you have two loading options which read Send Input or Send All. Since Send All involves going through all 20 Input Labels, the Send Input is a nice feature if you only made a change to a few devices. While on that Input, press the Send Input button and just that input will be loaded to the Cinema Rhapsody Mach 4. Also, you save the configuration for all inputs by selecting Save File. Inversely, you can load a previously stored configuration using the Load File feature. The Retrieve Input feature loads the settings internal to the Cinema Rhapsody Mach 4 into the PC Program.



From the front of the Cinema Rhapsody Mach 4, while on the LABELS/AV page, turn the Mode knob so that the cursor is on INPUT. Turn the Input knob to select the desired input whose triggers you wish to set.

Turn the Mode knob to TRIG. Turning the Input knob to select between Triggers 1 & 2, 1, 2, or OFF. Repeat these steps for all inputs.

To load this and other settings, turn the Mode knob to move the cursor to LOAD. Then press the Mode knob. The display will load all settings input by input.

At this time, you can choose to adjust the Final Input number, return the previous menu page (PREV) for other settings, or exit the setup completely (MAIN).

# Final Input

The Final Input feature lets you limit the number of inputs visible to the user as they turn the Input knob during normal operation. So instead of scrolling through all twenty (factory default) input labels, you can set the unit to display just the inputs available in your system.

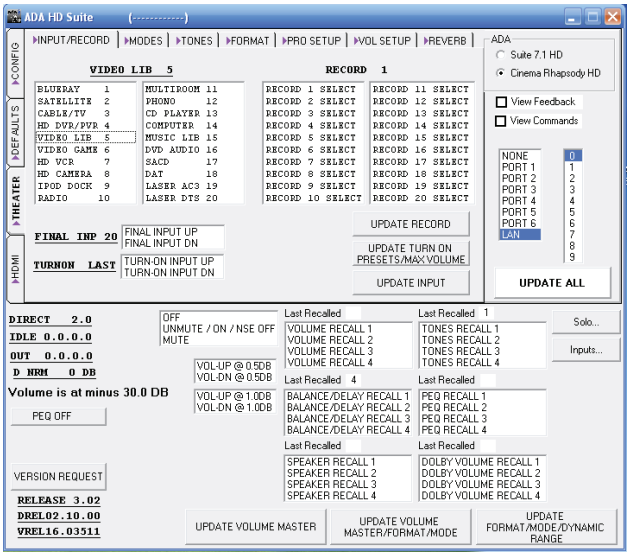
Sometimes, the final input number corresponds to the number of source devices connected to the Cinema Rhapsody Mach 4. However, if you are using the Cinema Rhapsody Mach 4's virtual inputs such that a single source component takes up multiple Input Labels with different Input Presets and/or Default Modes, the Final Input number will be greater than the number of source components.

Determine the number of virtual inputs (Input Labels) you are using and then set the Final Input to that number.

**Note:** Final Input reduces the number of inputs visible by eliminating the highest input labels in order. You cannot set the Cinema Rhapsody Mach 4 to skip over inputs that are not used. If you have an Input Label that you want to use above an Input Label you are not using, you will need to recreate the input settings on a lower Input Label number.

**Note:** Unlike other virtual input related features, the adjustment of the Final Input is in real time (instantaneous). There is no "loading" required. Once set, the highest input you can select will be the Final Input number.

To set the Final Input number in the PC program, Select the side THEATER tab and then the top INPUTS tab. Using the FINAL INPUT DN or UP buttons, adjust the Final Input number. The Final Input number will change in the feedback area to the right of these buttons.



From the front of the Cinema Rhapsody Mach 4, while on the LABELS/AV display, navigate the cursor to MAX INPUT using the Mode knob. Use the Input knob to adjust the Final Input number.

When you are finished, you can return to the previous menu page by selecting PREV or exit the Setup Menu by selecting MAIN.

# Setup 1 - Speaker Size & Crossover Frequency

The Cinema Rhapsody Mach 4 uses the description of Small (SM), Large (LG), and None (NO) with respect to the speakers. Small refers to speakers that are not designed to handle low frequencies. Bass information is redirected to the subwoofer. Large refers to speakers that are capable of playing low frequencies and typically, no bass redirection takes place. None refers to that speaker not existing in your system (i.e. no back-center surround speakers)

There is another Cinema Rhapsody Mach 4 feature that works in conjunction with SMALL settings called Sub Crossover (SUB) which refers the Sub Woofer crossover frequency point that determines at which frequency the Small speakers' bass information is "rolled off" and sent to the subwoofer. Speakers that are set to Large are only rolled off if the Advanced Speaker Option is Enabled. The crossover frequency point is fully adjustable per speaker group on the Cinema Rhapsody Mach 4. Speakers are grouped together accordingly: Front Right & Left, Center, Surround Right & Left, Back Surround Right & Left, and Subwoofer.

**THX Rated or Small Speakers**

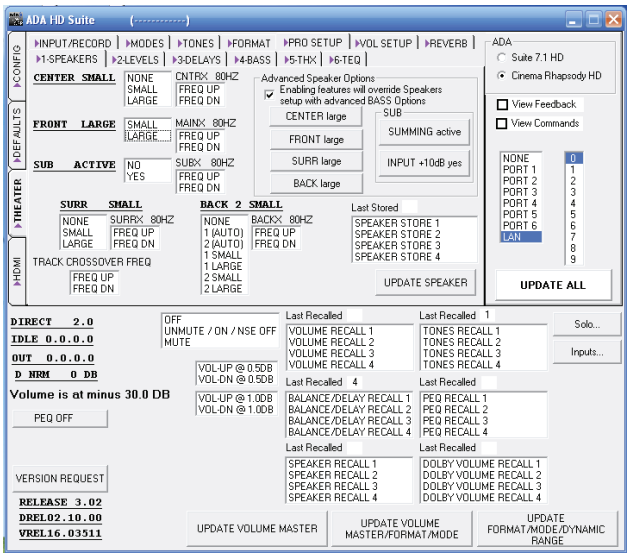
If you are using THX speakers, most such speaker designs are purposely engineered to not handle low frequencies because the subwoofer is providing all of the bass sound reinforcement. The typical crossover frequency point for THX speaker is 80Hz (Hertz). In a THX speaker system, all bass information below 80Hz intended for the left, center, right, surround left, surround right, back surround left, and back surround right speakers is redirected to the subwoofer and summed (combined) with the LFE (Low Frequency Effects or the ".1" in a 5.1 mix). As such, these speakers are rolled off at 80Hz.

**Full Range or Large Speakers**

If you have a mix of home theater speakers and full-range speakers (speakers that can handle bass), you can opt to set some speakers to the Large setting and other speakers to the Small setting. Typically speakers that are set to Large do not have any of their bass information sent to the subwoofer. However with the Cinema Rhapsody Mach 4 which features a second analog crossover, you can run speakers full range while still extracting the bass information to the subwoofer - the speaker most likely best capable of producing low frequency sounds.

**Advanced Speaker Option**

The Advanced Speaker Option can only be engaged using the PC program. To turn on the Advanced Speaker Option, click the check box.




For speakers that are going to be set to Small, ADA suggests setting them small in the DSP's crossover and Large in the analog crossover (Advanced Speaker Option). For speakers that are going to be set to Large, they should be set to Large in both crossovers.

Once you have set your speakers up, you have to turn on Sub Summing. Here you also have an option of boosting the sub input level by 10dB. Because all adjustments made here occur in real-time, ADA suggests listening to material as you make these adjustments.

The four Speaker Presets store settings all these settings including speaker sizes, crossover points and Advanced Speaker Options.

When setting up your speaker array using the PC program, select the side THEATER tab, the PRO SETUP top tab and then the 1-SPEAKERS sub tab. To select the speaker's size, press NONE, SMALL or LARGE. To adjust the frequency roll-off point for just that speaker(s), adjust FREQ UP or DN. When adjusting the Back Surround speakers, note that you must have the Surround speakers set to either LARGE or SMALL in order to have Back Surround speakers at all.

The TRACK CROSSOVER FREQ option raises and lowers the frequency roll-off point for all speakers together (other than the subwoofer).

To store a preset, press the SPEAKER STORE # button.

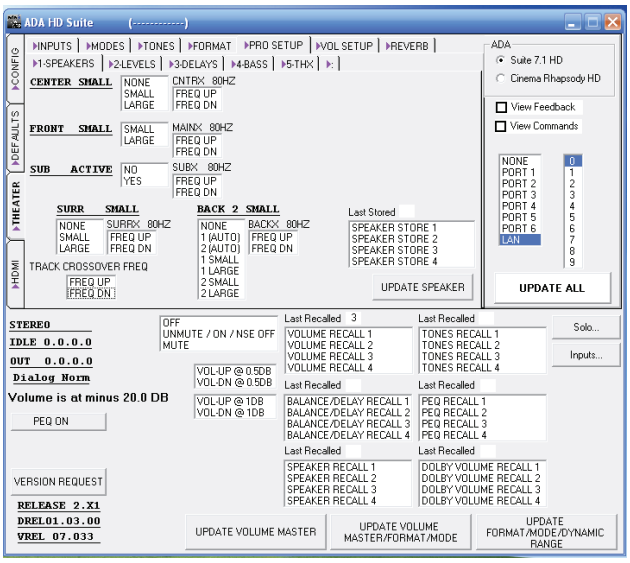
From the front of the Cinema Rhapsody Mach 4, while in the setup mode, use the Mode knob to navigate to the word PRO SETUP and press the Mode knob.

On the page that features LABELS/AV, use the Mode knob to navigate to the SPEAKERS option and press the Mode knob.

You are now on the Speakers page with the L and R channels are inverted. The front speaker are now able to be adjusted. Turning the Input knob will adjust the speaker size (L=large, S=small). For other speakers the option for none exists and is represented by the absence of a speaker symbol.

To set the Crossover Frequency, turn the Mode knob to CROSSOVER and press the Mode Knob. Turn the Mode knob to select the channels you wish to adjust and use the Input knob to change the frequency levels. Repeat these steps for all speakers you wish to adjust. To adjust the frequency for all speakers at the same time (other than the subwoofer), turn the Mode knob until the cursor is on ALL. Turn the Input knob to adjust all frequencies together.

To store the Speaker Presets, while on the Crossover page, turn the Mode knob to STORE. Turn the Input knob to select the desired Preset #. To store the current speaker configuration including speaker sizes, crossover values, etc, press the Input Knob.



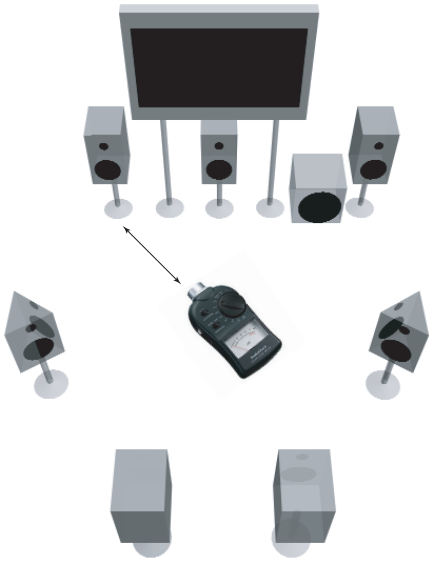

To view the current Speaker setup, select UPDATE SPEAKERS. To view the settings of any of the four possible Speaker Presets, press the SPEAKER RECALL 1-4 buttons at the bottom of the window (do not press SPEAKER STORE).

# Setup 2 - Speaker Level

The Cinema Rhapsody Mach 4's makes it easy to balance the speaker channels for the optimum home theater experience. Prior to entering this step, you should already have completed the positioning of your speakers and programmed their size into the Cinema Rhapsody Mach 4.

While delay settings (discussed in the next section) make certain that the sound from each speaker arrives to the primary listening position at the precise moment in time, Speaker Level adjustment makes certain that the balance of volume between speakers is accurate. A speaker further away from the listening position might not sound as loud as one that is closer so you will need to adjust that speakers level a little higher than the closer speaker. Alternately, one type of speaker (a front channel speaker) may have different characteristics from a rear channel speaker.

To do this properly, you will need to use an SPL Meter (Sound Pressure Level). There are several on the market including models that feature an analog meter (sweeping needle) while other units feature a digital numeric readout. For Speaker Level setup, the SPL meter with an analog sweeping needle will work best.

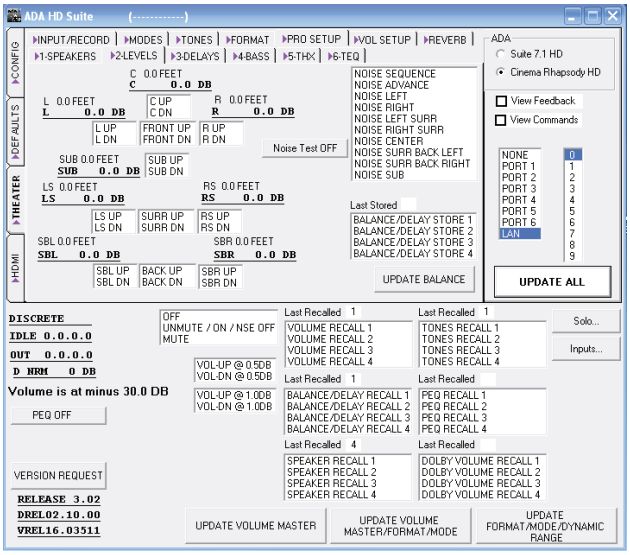


To setup the meter, make certain that you have good batteries and set the meters two switches to "C Weighted" and "Slow". Set the Range to 80 dB (Decibels) which covers the level range from 70 dB to 86 dB as the range point for setting up a home theater is 75 dB. Position the SPL meter at the primary seating area and aim its microphone toward the first speaker (typically Front Left).

The Cinema Rhapsody Mach 4 features an internal Pink Noise generator which is used to determine the signal level to each speaker. Please note that pink noise is a static type sound that will not harm your speakers and is used strictly for calibration.

When setting up your speaker array using the PC program, select the side THEATER tab, the PRO SETUP top tab and then the 2-LEVELS sub tab.

In the window toward the right are the text buttons that engage the pink noise generator. Here you can SEQUENCE (noise will move from speaker to speaker automatically), ADVANCE (go to the next speaker in order when pressed), or select a specific speaker in which the noise will remain until another option is selected or the Noise Test OFF button is pressed.




With pink noise playing through a speaker, aim the SPL meter at the speaker but note the position of where the meter is. You can spin it but you do not want to move it from that spot. Raise or lower that speaker channels audio level (UP or DN buttons). Any adjustments made here occur in real time (instantly). The level noted in Decibels (dB) will also change. Adjust that speaker's level such that the needle on the SPL meter is swinging with 75 dB as a center point. Then proceed to adjust another speaker by selecting its NOISE button and then aiming the SPL meter toward it.

From the front of the Cinema Rhapsody Mach 4, while in the setup mode, use the Mode knob to navigate to the word PRO SETUP and press the Mode knob.

On the page that features LABELS/AV in the top left corner, use the Mode knob to navigate to the LEVELS option and press the Mode knob.

You are now on the Levels page with the NOISE ON and the L or Left channel active. To select a specific channel, turn the Mode knob to that channel. Turning the Input knob will adjust that channels volume. Use the SPL meter as noted above to set the levels.

To engage Noise Sequence in which the pink noise advances from channel to channel automatically, turn the Mode knob to NOISE and turn the Input knob so that the display reads SEQ.

While Storing of Balance Presets is done on this screen, ADA suggests waiting to store these presets until the Delay Levels are also adjusted. The Balance Preset stores both the Balance Levels and Delay Levels.

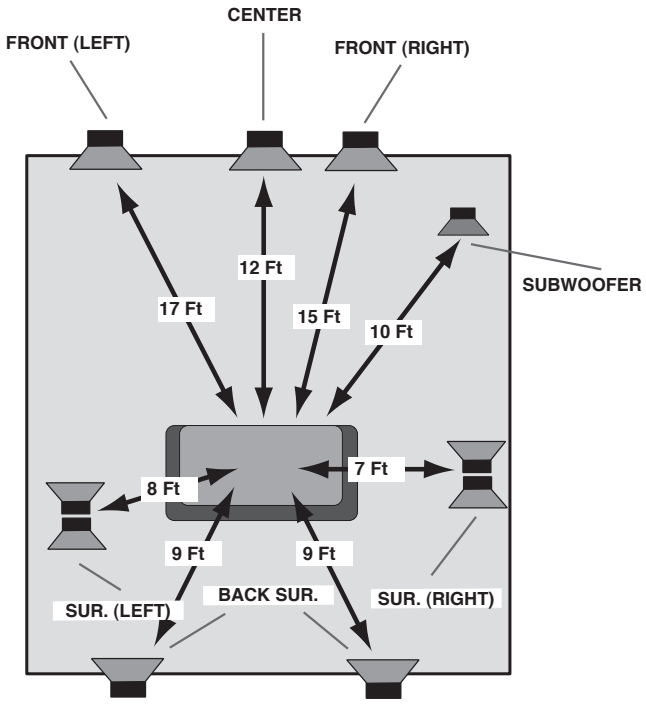
# Setup 3 - Delay Settings

The adjustment of the Delay setting can be configured independently for each of the Cinema Rhapsody Mach 4's eight channels (including the subwoofer channel). The goal of setting channel delays is to have the sound from each speaker reach the primary seating position at the same time or perhaps better put, the correct time. Since the Cinema Rhapsody Mach 4 can delay the signal of a channel from reaching that channel's output (and as such, the amplifier, then the speaker, and then your ears), the delay is applied to all speakers that are closer to the listener than the furthest speaker. This speaker, the one at the greatest distance from the primary listening/viewing position, for the sake of this section, will be called the "Reference Speaker", because all of the other speakers closer to the listening position will use this speaker's distance as a reference point.

The process of setting the delays will require the use of a tape measure or some other distance measuring instrument. ADA suggests using the U.S./British standard to measure these distances in feet as sound travels at approximately 1 foot per millisecond (1/1000th of a second). If you are using the metric standard to measure your distances, ADA suggests converting all measurements to feet as it will be easier to calibrate the delay time settings (1 foot is approximately equal to 30.5 cm). Note that the Cinema Rhapsody Mach 4 can be set in increments of 1/10th of a foot (0.1' or 3.5 cm).

The example details an extreme sample speaker placement where each speaker is located at a different distance from the primary seating position. The chart below uses these example distances.

To proceed, you will first determine where your primary listening/viewing seating position will be. Next you will want to measure the distance from the primary listening/viewing position to each speaker using a tape measure. Measure to 1/10th of a foot (~1.25 inches). You can use the blank chart below to fill in your speaker distances. Once you have filled in the speaker distances on the second line, take the highest value distance and insert it into the top row of each speaker column. Then subtract the distance of the speaker from the distance of the Reference Speaker. The end value (in feet) is the distance value for the delay setting for that speaker.




| | FRONT LEFT | CENTER | FRONT RIGHT | SUBWOOFER | LEFT SURROUND | RIGHT SURROUND | LEFT BACK SURROUND | RIGHT BACK SURROUND | |
|---|---|---|---|---|---|---|---|---|---|
| ENTER DISTANCE OF FURTHEST SPEAKER (REFERENCE SPEAKER) | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | |
| ENTER DISTANCE OF EACH SPEAKER | 17 | 12 | 15 | 10 | 8 | 7 | 9 | 9 | |
| SUBTRACT SPEAKER'S DISTANCE FROM REFERENCE SPEAKER | 0 | 5 | 2 | 7 | 9 | 10 | 8 | 8 | THESE ARE THE SPEAKER'S DELAY SETTINGS |

| | FRONT LEFT | CENTER | FRONT RIGHT | SUBWOOFER | LEFT SURROUND | RIGHT SURROUND | LEFT BACK SURROUND | RIGHT BACK SURROUND | |
|---|---|---|---|---|---|---|---|---|---|
| ENTER DISTANCE OF FURTHEST SPEAKER (REFERENCE SPEAKER) | | | | | | | | | |
| ENTER DISTANCE OF EACH SPEAKER | | | | | | | | | |
| SUBTRACT SPEAKER'S DISTANCE FROM REFERENCE SPEAKER | | | | | | | | | THESE ARE THE SPEAKER'S DELAY SETTINGS |

When setting up your speaker array using the PC program, select the side THEATER tab, the PRO SETUP top tab and then the 3-DELAYS sub tab. Here you can increase (UP) or decrease (DN) the delay levels by channel. All changes occur in real-time (instantly).

The Master Delay is a global delay or lip sync delay. This feature can be added to remote control or touchscreen permitting the end user to compensate for lip sync issues which can vary from source to source and even program content.

If you want to see the delays currently active on the Cinema Rhapsody Mach 4, press the UPDATE DELAYS button.

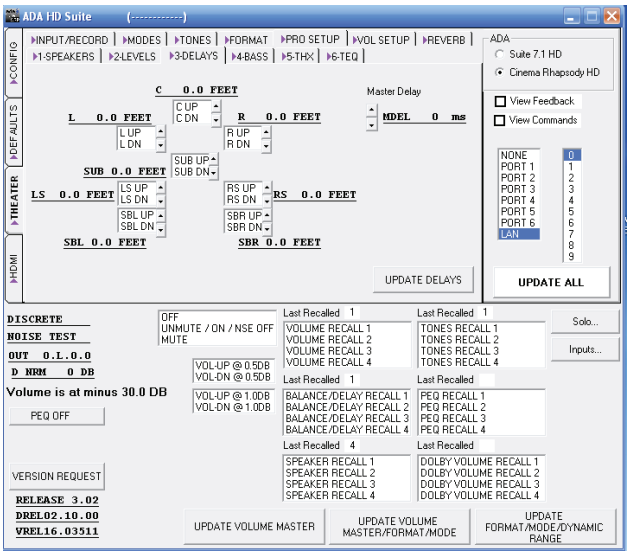
From the front of the Cinema Rhapsody Mach 4, while in the setup mode, use the Mode knob to navigate to the word SETUP and press the Mode knob. On the page that features LABELS/AV in the top left corner, use the Mode knob to navigate to the DELAYS option and press the Mode knob.

You are now on the Delays page with the cursor flashing on the L or Left channel. To alter the number (in 1/10th feet or 3cm) turn the Input knob. To adjust other speaker channels, turn the Mode knob and accordingly use the Input knob to make any changes.

To set the Master (Lip Syn) delay, turn the Mode knob so that the cursor is on MASTER. Turn the Input knob to adjust the Master Delay. Navigate to PREV to return to the previous screen.

To store the Balance and Delay levels (but not the Master Delay) on a Balance Preset, turn the Mode knob to STORE and then turn the Input knob to select the Preset number you wish to store. Then press the Input knob to store that preset.

Storing the Balance Presets on either the Delay or the Speaker Level screens stores both delays and levels.



# Setup 4 - Bass Limiter

The Cinema Rhapsody Mach 4 provides you with the ability to engage a Bass Peak Limiter that operates in a range from 0 dB (decibels) to -24 dB. The function of the Bass Peak Limiter is to reduce the possibility of overloading the subwoofer in cases of extreme volume and/or software that provides extremely dynamic bass information. If your subwoofer is capable of providing a large level of bass without bottoming out, you may not need to engage the Bass Peak Limiter (leaving it Off). If however, you play your system at volume levels that on occasion will cause your subwoofer to play distorted audio segments, you will wish to engage the Bass Peak Limiter. The Cinema Rhapsody Mach 4's "Out Of The Box" setup has the Bass Peak Limiter, also known as the Bass Limiter, set to OFF.

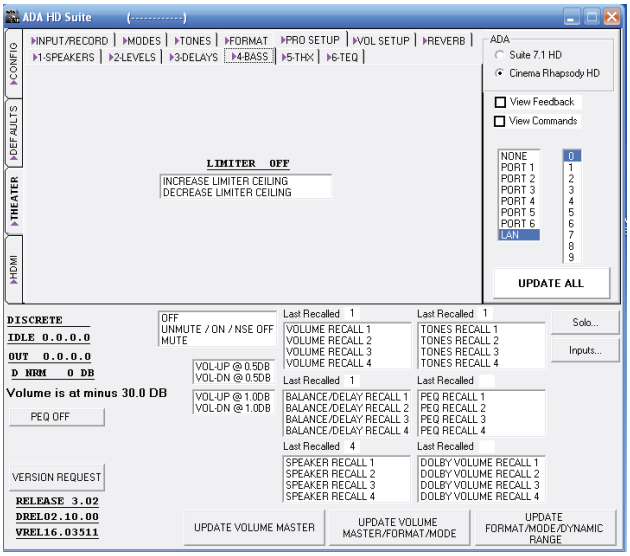
When setting Bass Peak Limiter using the PC program, select the side THEATER tab, the PRO SETUP top tab and then the 4-BASS sub tab. Here you can increase (UP) or decrease (DN) the limiter level in dBs. All changes occur in real-time (instantly).

From the front of the Cinema Rhapsody Mach 4, while in the setup mode, use the Mode knob to navigate to the word PRO SETUP and press the Mode knob. On the page that features LABELS/AV in the top left corner, use the Mode knob to navigate to the BASS option and press the Mode knob.

You are now on the Bass Peak Limiter page with the cursor flashing on CEILING. To engage and/or alter the Limiter, turn the Input knob accordingly. The Bass Peak Limiter range is OFF (0 dB) to -24 dB.

To return to the previous page, turn the Mode knob to PREV and press the Mode knob.

To exit the Setup Mode entirely, navigate to the letter MAIN and press the Mode knob.



# Setup 5 - THX

The Cinema Rhapsody Mach 4 permits the adjustment of features that are specific to THX Ultra 2.

## Boundary Gain Control (BGC)

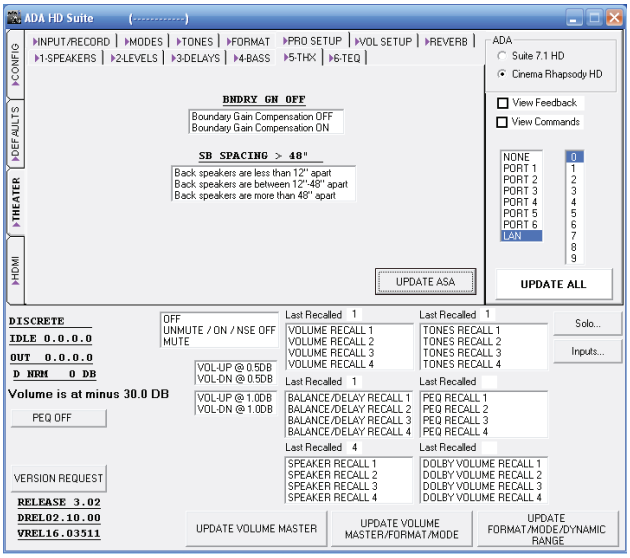
When the chosen listening room layout (for practical or esthetic reasons) results in the listener being too close to the rear wall, the resulting bass level can be sufficiently reinforced by the boundary that the overall sound quality becomes “boomy”. Boundary Gain Compensation (BCG) can be switched ON to restore the correct bass performance. Please note, that ADA recommends this filter remain off.

## Back Speaker Spacing - Advanced Speaker Array (ASA)

The optimum blend of ambient and rear directional information provides an enhanced surround experience over a wider listening area for all multi-channel formats. With stereo surround tracks and multi-channel music,, the signal is fed unprocessed to the left and right surrounds and after further processing, to the surround back speakers. This processing uses THX ASA (Advanced Speaker Array) Technology and provides an enveloping rear surround field over a wide listening area. The adjustment to the ASA (Back Speaker Spacing) is based on three settings; if the two back surround speakers are less than 1 foot apart, if they are between 1 and 4 feet apart, or if they are greater than 4 feet apart. To set the Back Speaker Spacing for your system.

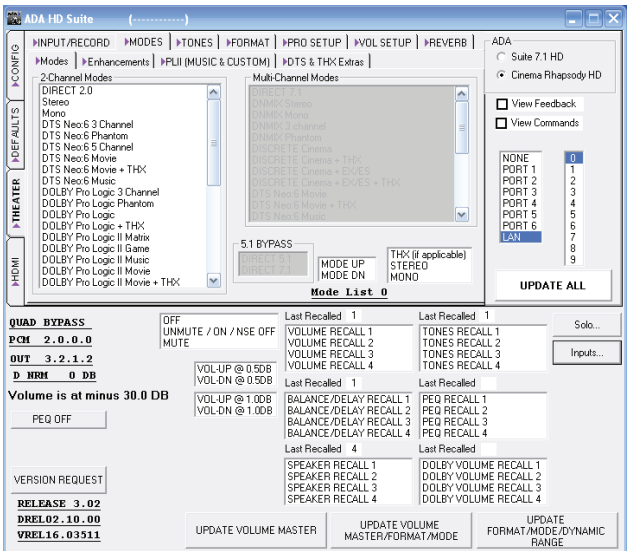
In the PC program, select the side THEATER tab, the PRO SETUP top tab and then the 5-THX sub tab. Here you can turn Boundary Gain ON or OFF as well as select the ASA speaker settiing.

From the front of the Cinema Rhapsody Mach 4, while in the setup mode, use the Mode knob to navigate to the word PRO SETUP and press the Mode knob. On the page that features LABELS/AV in the top left corner, use the Mode knob to navigate to the ENHANCEMENTS and press the Mode knob. On the Enhancement page, turn the Mode knob to THX and press the Mode knob. Use the Mode knob to navigate to either Boundary Gain or Back Spacing. Use the Input knob to turn Boundary Gain ON or OFF and to select the ASA setting of choice.



# Modes, DTS Enhancements & THX Options

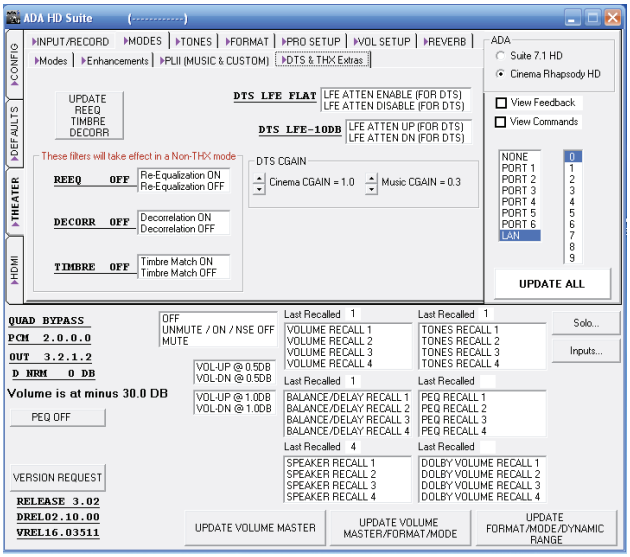
Modes have become so numerous that it may become difficult to manage them. Here, the Cinema Rhapsody Mach 4 is specifically designed to minimize mode clutter. In addition to Default Modes per input, ADA begins by placing modes in one of two camps, Two-Channel Modes or Multi-Channel Modes. Both groups are never available at the exact same time. So when the Cinema Rhapsody Mach 4 senses a two-channel source playing, it makes Two-Channel modes available. The PC program even grays out the Multi-Channel modes while the front panel does not preset them at all. Alternately, when a multi-channel signal is detected (i.e. 5.1), then the Two-Channel modes grey out or are not visible while the Multi-Channel modes are.




**DTS Enhancements & THX Enhancements**

The Cinema Rhapsody Mach 4 PC program has a unique tab that permits you to engage DTS LFE Attenuation as well as adjustment of THX Enhancements. Please note, THX Enhancements are only available through the PC program and cannot be accessed via the front panel.

By selecting the Theater side tab and then Mode top tab, you can then select the DTS & THX Extras tab to access control of these features.




For THX, the Cinema Rhapsody Mach 4 is unique in that it permits you to engage Re-Equalization, Deorralation, and Timbre Match at will providing you are not on a THX mode in which case, all three THX filters will automatically be engaged. This is ideal for those that recognize the benefit of Re-EQ but prefer to leave Decorrelation and Timbre Match off.

DTS LFE Attenuation is incorporated in the Cinema Rhapsody Mach 4 to compensate for what some may perceive as excessive bass when playing DTS encoded software. To minimize this, the Cinema Rhapsody Mach 4 is uniquely capable of lowering the LFE when a DTS bit stream is detected. Here you can also set the level the LFE is lowered (in dB) from 0 to -20 dB. Generally, -10 dB should do the trick. If you choose to use this feature, you must first select LFE ATTEN ENABLE (FOR DTS). Then you can adjust the level you wish to attenuate the LFE signal. DTS LFE can be adjusted from the front of the Cinema Rhapsody Mach 4 under DTS LFE.

# Simulated Surround & Dynamic Range Settings

### Stereo & Mono Enhance Settings

The Cinema Rhapsody Mach 4 features two ADA modes that are designed to enhance your experience when viewing stereo or mono source material such as older films, TV shows, or other programming that is neither Dolby Pro Logic or 5.1 encoded.

Stereo Enhance is designed to provide spatial separation using the entire speaker array. This mode will work well for both strong and weak stereo signals.

Mono Enhance is similar but works with mono source material creating an enveloping surround sound experience.

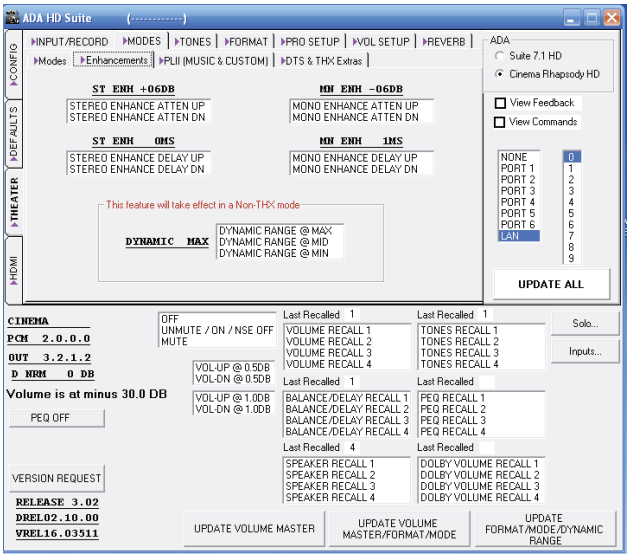
Uniquely, the Cinema Rhapsody Mach 4 permits you to customize these simulated surround sound modes to the room environment by setting an attenuation level (level of audio to the surrounds) and delay level independently for each of these two modes. Changes are made in real time so that as you make adjustments to these setting, you can hear the changes. To setup these modes, play the appropriate type of source material and adjust according to personal preference.

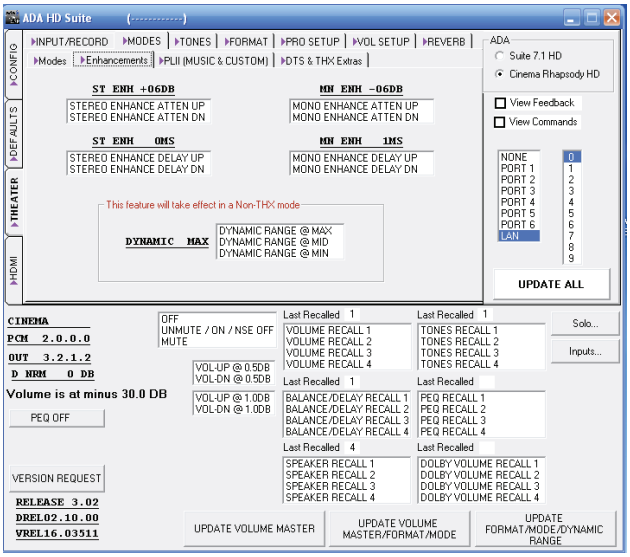
In the PC program these changes are made under the Modes tab under Enhancements.

From the Cinema Rhapsody Mach 4's front panel, while in setup mode, navigate to the PRO SETUP page and then to the ENHANCEMENTS page. Use the Mode knob to select the feature you wish to adjust and then use the Input knob to adjust its setting.

### Dynamic Range Settings

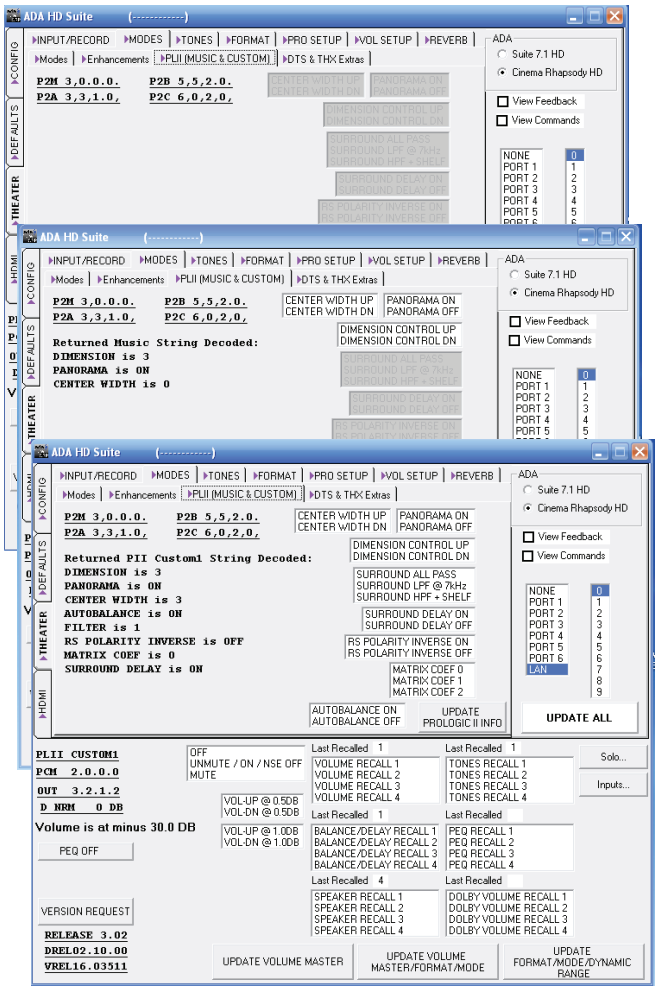
Dynamic Range is normally set to Max in typical ADA home theater systems as this setting will provide the vibrant experience. There are two other settings available that can only be set via the PC program. These minimize the range of the audio experience such that there is less of a volume difference between loud sounds and softer sounds. In theaters where the whispers are too soft or the explosions too loud, you can elect to try either Dynamic Range Min or Mid. This feature can only be adjusted from the PC program.





# Dolby Pro Logic II Music & Custom Settings

The Cinema Rhapsody Mach 4 features Dolby Pro Logic decoding. While the parameters behind the Dolby Pro Logic II Movie mode are not adjustable (the top image of the PC program shows that all features are greyed-out when in this mode), some of these parameters are adjustable for Dolby Pro Logic II Music mode (middle screen shot). All of the parameters are available for the three Dolby Pro Logic II Custom modes. In order to make changes (which occur in real-time), you must first select a Pro Logic II Music or Custom Mode.




Center Width - Using a scale from 0 (off) to 7, Center Width spreads the center channel image toward the right and left. Remember that this is still a mode that is based on Dolby Prologic decoding and as such, mono (i.e. vocals in music) are extracted from the right & left tracks and passed onto the center channel.

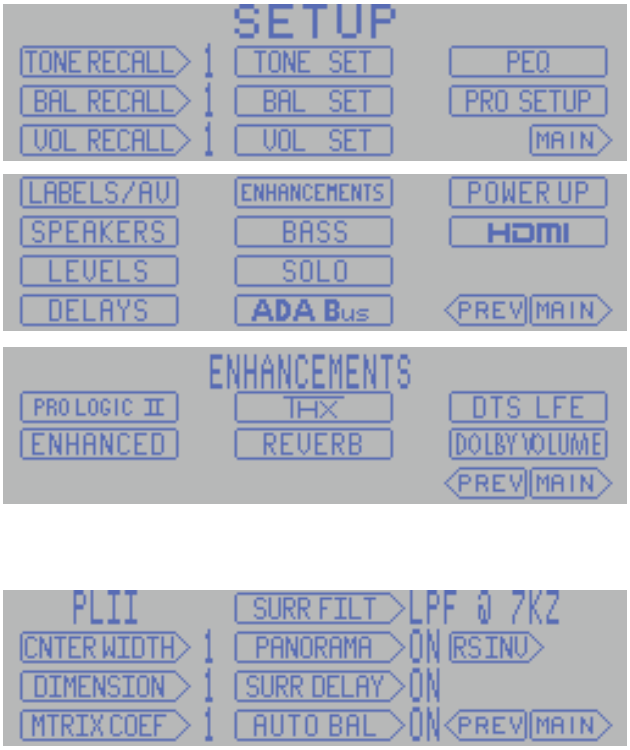
Panorama On or Off - When Panorama is ON, the sound field from the front speakers is pulled into the surround speakers.

Dimension Control - Using a scale from 0 (off) to 7, Dimension Control is the level of audio that is pulled to the surround channels when Panorama is ON.

Additional features available when first selecting one of the three Prologic II Custom modes include Surround Shelfing filter, Surround Delay On/Off, Polarity Control, Matrix Coefficient Control and Auto Balance On/Off.

Once features are set for either Prologic II Music or any of the three Custom modes, it remains set for that mode.

From the front panel of the Cinema Rhapsody Mach 4 while in the Setup Mode navigate to the PRO SETUP using the Mode knob and press the knob. While on the screen that displays LABELS/AV in the upper left-hand corner, turn the Mode knob ENHANCEMENTS and press the Mode knob. Then navigate to PRO LOGIC II and press the Mode knob.




Use the Mode knob to select features wile using the Input knob to alter the settings. You must first select either a Pro Logic II Music or Custom mode in order to alter the mode.

# Reverb Mode Settings

The Cinema Rhapsody Mach 4 features several modes that incorporate Reverb. Uniquely, ADA permits you to fully adjust these modes including features that permit you to determine the Size of the affect, the Mix percentage, the Low Frequency Cut, the Reverb Time and the Damping frequency. These features can be individually set for each of the six Reverb modes. Once set, the features are preserved.

Adjustments are made in real time so that as you change these settings you can hear the affects of your adjustments providing that mode is selected at the time.

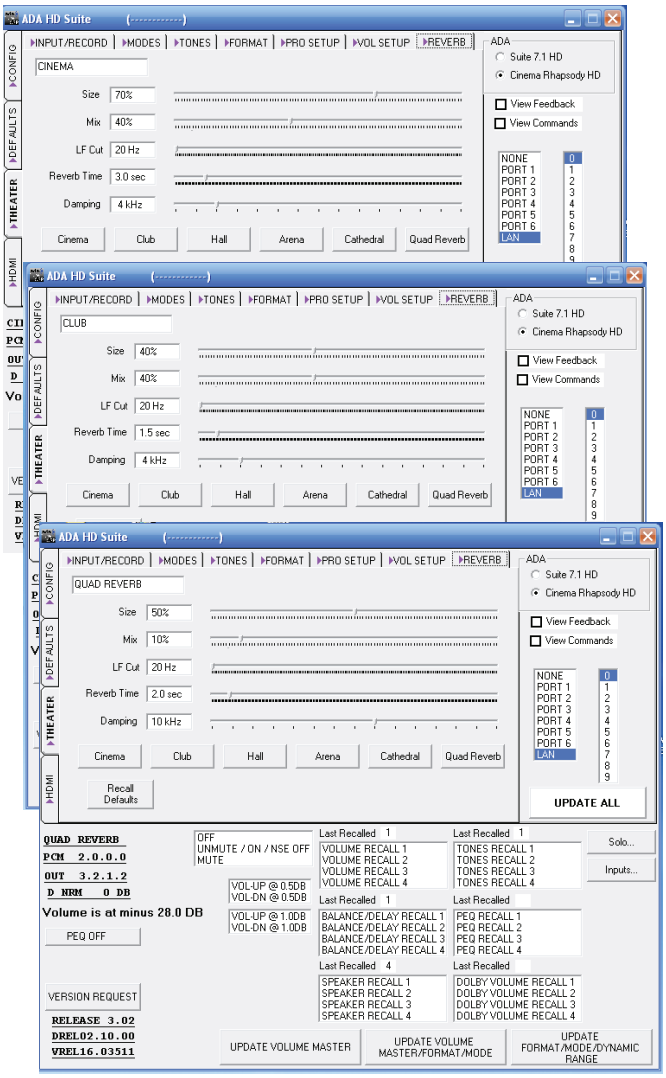
ADA has set factory Defaults which can be re-called at any time. Note that Recalling these Defaults only recalls the ADA Factory Defaults for the selected Reverb Mode and will not affect the other Reverb Modes.

To adjust the settings from the PC Program, select the side Theater tab and then the top Reverb tab. Then select the reverb mode you wish to adjust.

From the front of the Cinema Rhapsody Mach 4, while in the Setup Mode, turn the Mode knob to navigate PRO SETUP and then press the Mode knob. You are now on the page that reads LABELS A/V in the upper left-hand corner of the page. Turn the Mode knob to REVERB and then press the Mode knob. You are now on the Reverb screen.

The display's REVERB line shows the Reverb mode. Turning the Input knob will scroll through the six Reverb modes. When you are on the desired Reverb mode, turn the Mode knob to cycle through its features. While on a feature, turn the Input knob to adjust the setting.

If you want to reset a Reverb mode to the ADA Factory default, turn the Mode knob such that the cursor is DFLT and then press the Mode knob. The current Reverb mode is now reset to the factory setting. Other Reverb modes remain unchanged. To exit, navigate to either PREV (previous screen) or MAIN (exiting the setup modes screens) using the Mode knob and then press the Mode knob.

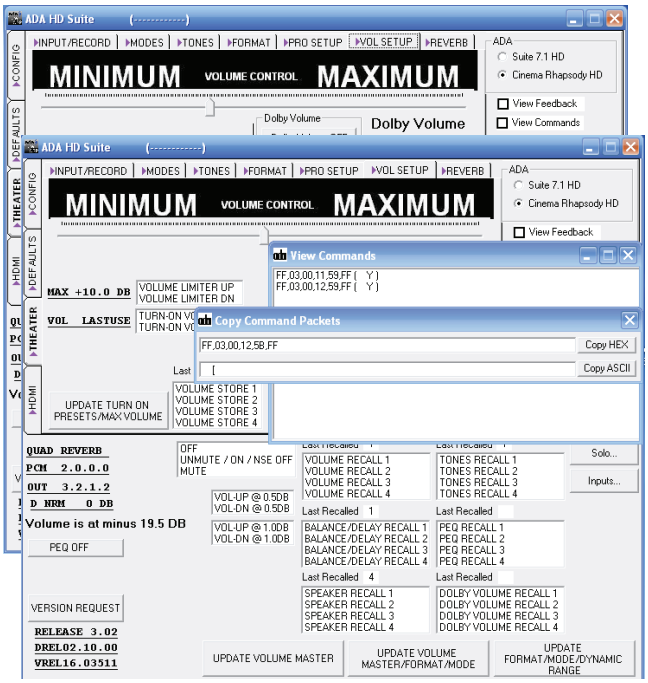


# Maximum & Turn-On Volume Settings

The Cinema Rhapsody Mach 4 features a comprehensive volume control stage that in addition to letting you access a volume point numerically, also lets you set a maximum volume level, four volume presets, and select one of the four volume presets as your turn-on volume level.

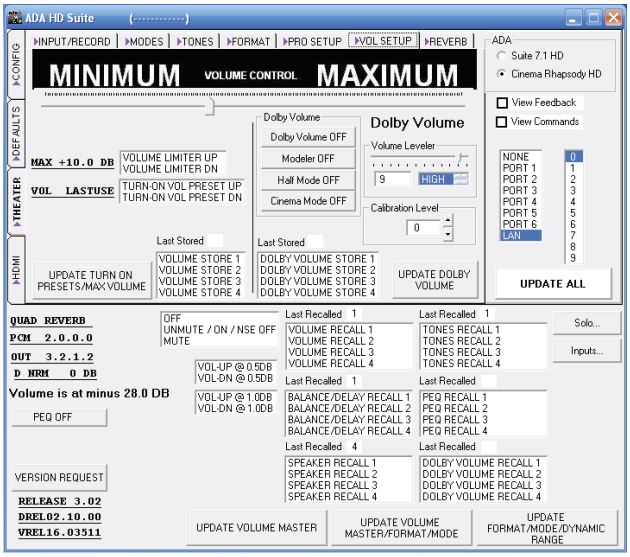
On the PC Program tab labeled VOL SETUP, the slider permits you to jump to a specific volume point.

Volume Numeric Direct - This feature is available on the ADA PC program and lets you jump to a specific volume point. In the PC program, a virtual slider accomplishes this. Essentially, when you release the slider the volume command is sent. To view this code in HEX, you simply check the View Commands box and if you wish to copy the HEX command into a program, merely double-click on the command itself.




Storing Volume Presets - This tab also enables you to store the current volume as one of the four Volume Presets. When on a volume you wish to store, press the corresponding VOLUME STORE # button. These four presets can be recalled at turn on or when an input is selected.

Turn On Volume Preset - You can select one of the four volume presets as your Turn On Preset or have the system turn on the last volume setting by selecting the Last Used option.




From the front panel of the Cinema Rhapsody Mach 4 while in the Setup Mode navigate to the VOL SET using the Mode knob and press the knob. To select a navigate between features, turn the Mode knob. To alter the setting, turn the Input knob.

To store a volume preset, first make certain that you are at the volume level you wish to store by turning the Volume knob. Then navigate to STORE and turn the Input knob to select the desired volume preset number. Then press the Input knob to store that preset. The same steps can be used to Recall a volume preset.

To set the Maximum Volume Level, select that feature and then turn the Input knob to adjust.

# Dolby Volume

The Cinema Rhapsody Mach 4 features Dolby Volume, an intelligent volume control system that resolves and improves audio frequency response and volume inconsistencies. Dolby Volume can be turned on or off as can be the two main modules of Dolby Volume: Volume Modeler and Volume Leveler.

Audio is meant to be played at a reference level and Volume Modeler compensates for how people perceive loudness by adjusting audio using a psychoacoustic model based on the equal loudness/ Fletcher-Munson curves. Volume Modeler applies different volume contours for different volume settings, maintaining the same perceived listening experience as the reference level experience.

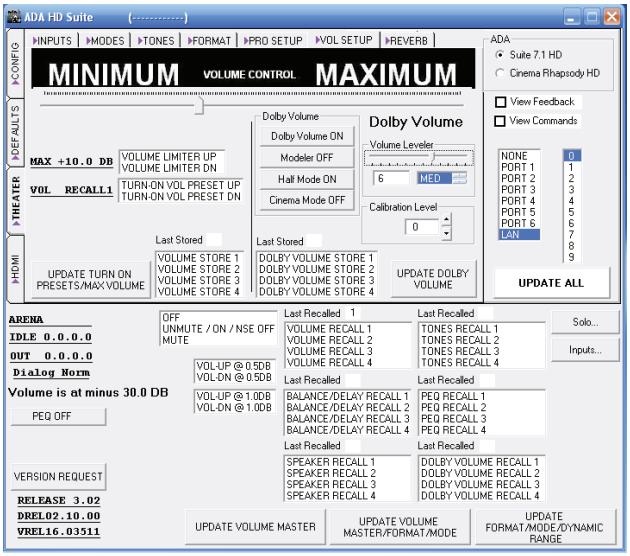
Volume Leveler resolves volume inconsistencies such as, those between input sources, or broadcast stations. Volume Leveler continually measures the perceptual loudness of audio content and dynamically applies multiband gain modifications so that the perceived loudness of all audio content remains consistent. The Volume Leveler amount parameter adjusts the amount of leveling applied by the Volume Leveler. Its range is from 0 to 10, with 10 being more leveling and 0 being less leveling.

When Half mode is on, the Volume Modeler does not apply volume contour gains for playback levels higher than reference level; just the volume setting, as a flat spectrum gain, is applied.

Cinema Reference mode is an optional user controllable feature, which calibrates Dolby Volume to work with content authored for cinema level reproduction (i.e. DVD or Blu-ray discs).

Calibration Offset (–15 to +15 dB) provides the ability to fine tune the calibration of a Dolby Volume product and compensate for things such as speaker efficiency or actual listening position.

From the front panel of the Cinema Rhapsody Mach 4 while in the Setup Mode navigate to the PRO SETUP using the Mode knob and press the knob. Turn the Mode knob to ENHANCEMENTS and press the Mode knob. Turn the Mode knob to DOLBY VOLUME and press the Mode knob. Use the Mode knob to select features and the Input knob to adjust them.

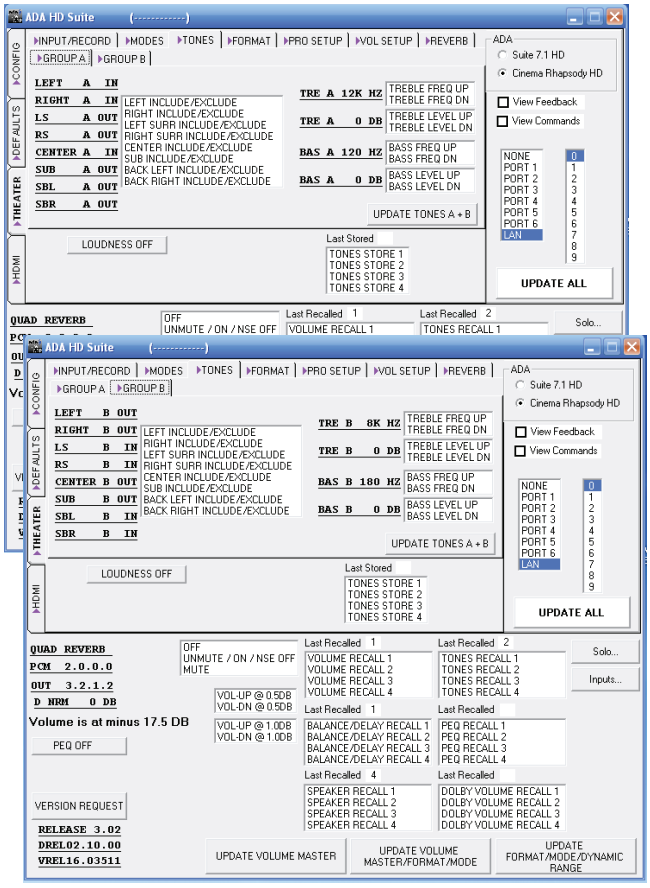


# Tone Settings & Loudness On/Off

The Cinema Rhapsody Mach 4 features a loudness contour filter and parametric tone control (where in you can adjust Bass and Treble Levels as well as set a Frequency points for both bass and treble).

To turn Loudness on or off, press the button.

To set the Tone Controls using the PC program, select the Tones tab and then either Group A or B. Here speakers are toggled into or out of a group. You can also raise or lower the frequency points and levels for both bass and treble. There are two speaker groups - Group A and Group B. In each group, you can determine which speakers track that group (are affected by that group's bass and treble levels). Speakers can be in one group or another, both groups or neither. There are four Tone Presets that are saved by simply Storing the preset while the audio levels are in use. The preset not only stores levels and frequency points, but also which speakers are active in both Speaker Group A and B. If your front speakers are one design while the surrounds are another, you can place each in their own group. If you are looking to EQ just the left and right across two frequency points include them in both groups while excluding all other speakers. If you want to just correct the subwoofer, include it in both groups while excluding all other speakers.

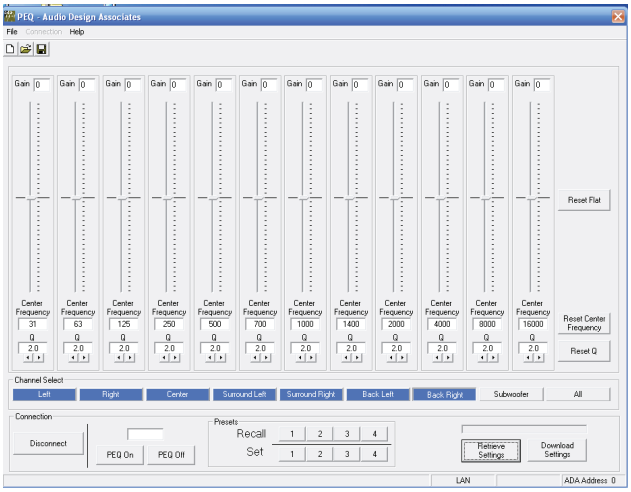



For Loudness, from the front panel of the Cinema Rhapsody Mach 4 while in the Setup Mode turn the Mode knob to navigate to VOL SET and then press the Mode knob. Use the Mode knob to navigate to LOUDNESS and the Input knob to turn it ON or OFF.

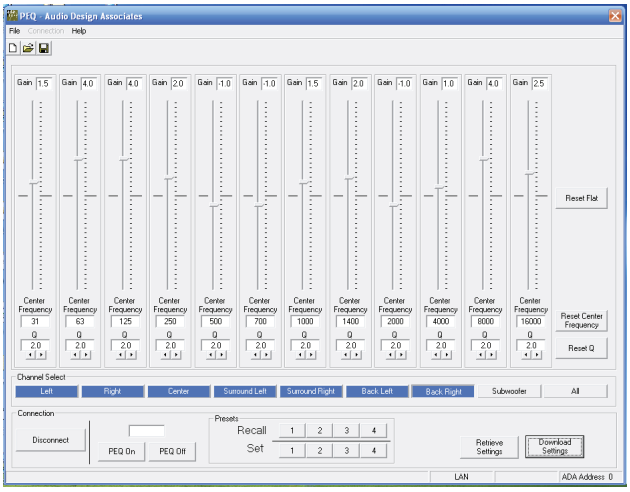
For Tones, from the front panel of the Cinema Rhapsody Mach 4 while in the Setup Mode turn the Mode knob to navigate to TONE SET and then press the Mode knob. Turning the Mode knob will first scroll through channels. To engage the channel into or out of the current speaker GROUP (A or B), press the Mode knob (the channel will show or disappear). To change Treble, Bass, or their Frequency, turn the Mode knob to the desired feature and adjust by turning the Input knob. To Store or Recall a preset, turn the Mode knob to that feature and then turn the Input knob to select the desired preset number. Press the Input knob to store or recall the desired Tone Preset.

# Parametric EQ (PEQ) Setup

The Cinema Rhapsody Mach 4 features a multi-band parametric equalizer (PEQ) that provides you with tools to dramatically correct acoustical imperfections. Typically, best results are achieved using acoustical measurement systems. The PEQ is a separate PC program to the Cinema Rhapsody Mach 4 PC program. ADA suggests running one or the other but not both at the same time for optimal results. You can also set and adjust the PEQ from the front of the Cinema Rhapsody Mach 4.




Each of the seven main channels features a 12-band equalizer. Each band allows you to set a center frequency point, Q level and +/- gain level per speaker channel. You can have all seven main channels track each other. The subwoofer channel features an 8-band equalizer with independent center frequency, Q and level per band.




There are four PEQ presets that store all parameters. You can also reset center frequency, Q and levels individually with the touch of one button. Lastly, the PEQ can be turned on and off permitting you to A/B your results. Like other Cinema Rhapsody Mach 4 setup features, you can store your PEQ settings to a file on your PC.

To set and adjust the PEQ from the front panel of the Cinema Rhapsody Mach 4, while in the Setup Mode navigate the cursor to PEQ using the Mode knob and press the knob.

Pressing the Mode knob toggles its behavior between selecting bands to adjust or selecting channels to adjust.

While on the desired frequency band, turning the Input knob raises or lowers the Gain with the letter G showing you the numeric level.

While on a band, pressing the Input knob toggles the control to Frequency Center Point and Q settings. Here turning the Mode knob advances the frequency through 10000th's, 1000th's, 100th's, 10s', and 1's. Turning the Input knob adjusts that numerics value. Turning the Mode knob to Q permits the Input knob to adjust the Q setting. Press the Input knob to exit this feature.

While on a Preset number (R = Recall, S = Store), press the Mode knob to recall or store.

# HDMI Down Mix

The Cinema Rhapsody Mach 4 featured a HDMI Equalizer in the units with HDMI 1.3.

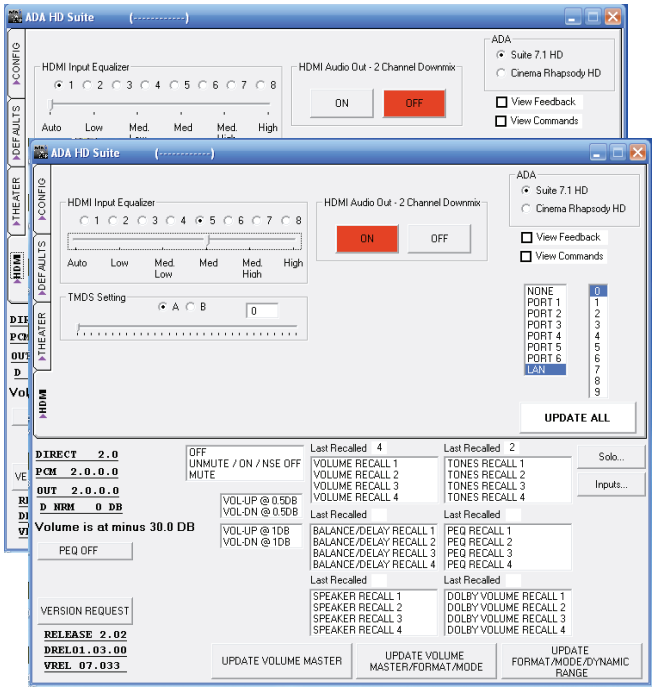
For all units featuring HDMI 1.4, this feature is no longer functional although the menu options still display on both the front panel and PC software.

Making adjustments here does not provide any functionality.

The only feature that is still is functional is the HDMI Down Mix feature. Here the Cinema Rhapsody Mach 4 is capable of passing 2-channel audio over the HDMI cable to the TV in the event you would like to have the TV's speakers provide sound. Like all functions, this feature can be incorporated into a remote control or touch-screen system. In the PC program, this feature is a simple On or Off button press.

From the front panel of the Cinema Rhapsody Mach 4 while in the Setup Mode navigate to the PRO SETUP and press the Mode button. Turn the Mode knob to navigate to the HDMI and press the Mode Knob.

Ignore the Input, Input EQ, Output and Output EQ features and navigate directly to DNMX OUTPUT using the Mode knob. Turn the input knob to turn the Down Mix option ON or OFF.



# Solo Test

The Cinema Rhapsody Mach 4 features a Solo Test that allows you to turn off speakers while leaving others playing. The affect could be described as unplugging speakers during a performance. The obvious difference is that the Cinema Rhapsody Mach 4 does this safely and quickly.

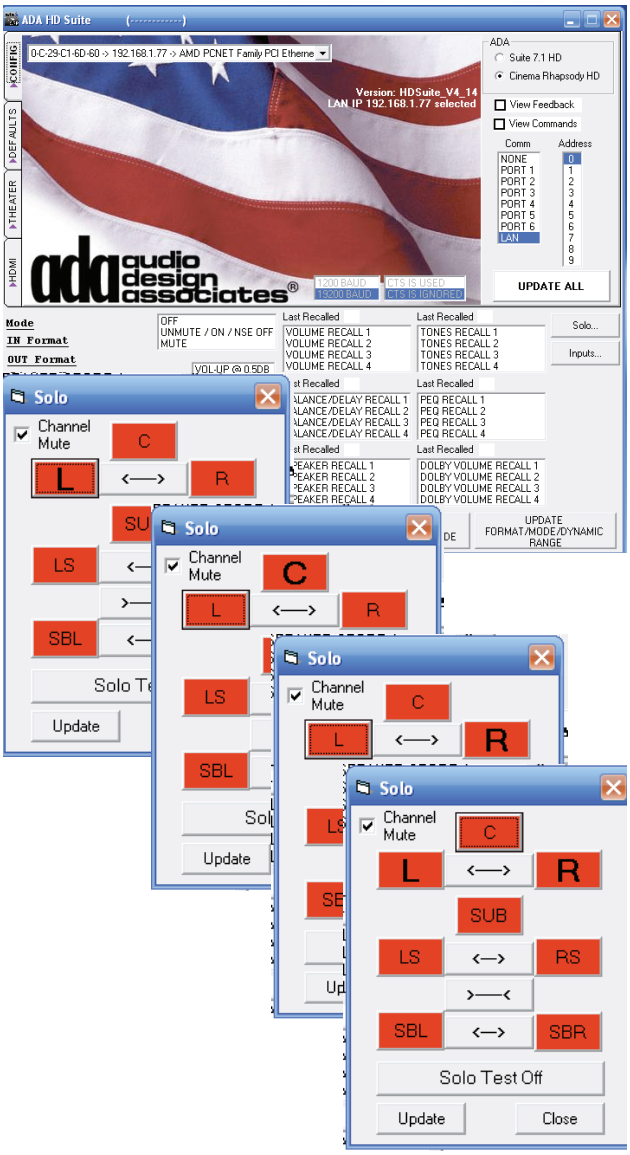
You can use this feature to determine if you have a blown speaker driver or if your speakers are out of phase.

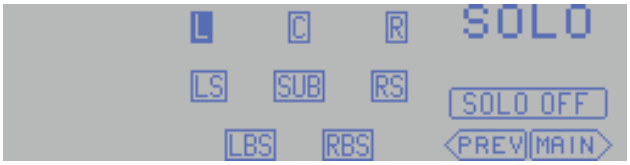
It is also a terrific way to demonstrate the benefits of multi-channel music providing you have the proper source material. A particular ADA favorite is the DTS version of the Eagles Hell Freezes Over CD or DVD (must be the DTS version). There is a bonus 17th track on either disc that is a special recording of Seven Bridges Road. Mixed in DTS 5.1, each of the five band members is mixed on their own speaker channel. When playing the song through the entire speaker array, the sound is natural and welcoming. We encourage playing the cut with the audience seated during the first half of the song and then encouraging them to get up an move around during the second half, noting that while the sound field flexes as they move around the room it does not come apart. Then we replay the song but this time with Solo Test ready. Now we can engage just one speaker at a time revealing the vocals of that one artist. By the end of the demonstration, it is becomes obvious that this song is mixing live - in the room itself.

From the PC program, select the Solo button on the right side of the window and a new window will open up revealing the Solo buttons. Red buttons indicate input channels, bold letters indicate Solo channels, and non-bold letters are channels that are muted. The PC program lets you quickly turn speaker channels on and off, even in pairs.

From the front panel of the Cinema Rhapsody Mach 4 while in the Setup mode screen navigate to PRO SETUP and press the Mode knob. Then turn the Mode knob to SOLO and press the Mode knob.

The cursor will be flashing on L or Left channel. Turn the Mode knob to select between channels or the SOLO OFF function.





# Saving (& Loading) Input Configuration & PROM Files

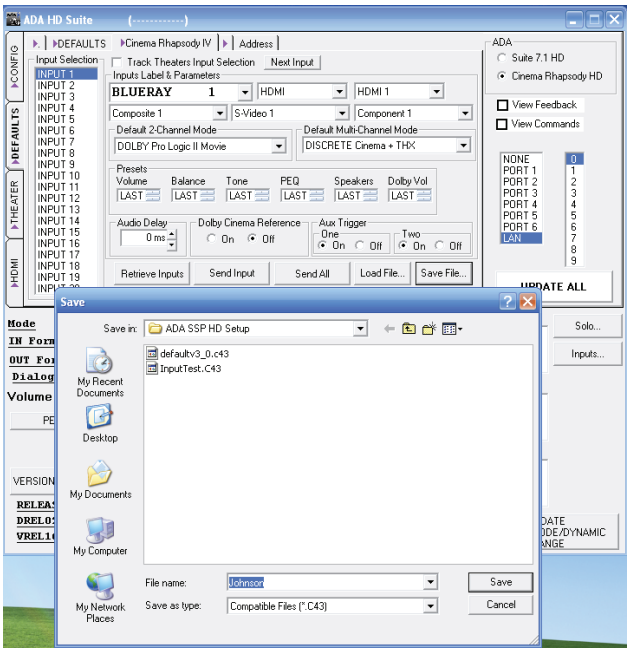
The Cinema Rhapsody Mach 4 allows you to save the configuration of your inputs to your PC. This preserves the Input Lables, the connectivity of the jacks, the default modes and the input presets.

By storing input configurations to your PC, you can recall them in the event that there is ever a problem with the Cinema Rhapsody Mach 4. Alternately, since many home theater utilize similar components, recalling a previously saved project may give you a head start on a different project.

To Save the files setup (or recall a previously saved setup), select the Default side tab and the Cinema Rhapsody Mach 4 top tab.

After all custom input configurations are done, press the Save File button. A Save As window will open. Here you can select to save the file in an alternate folder as well as label the file.

When you are done, select Save. The file will be saved as the ".C43" file extension.

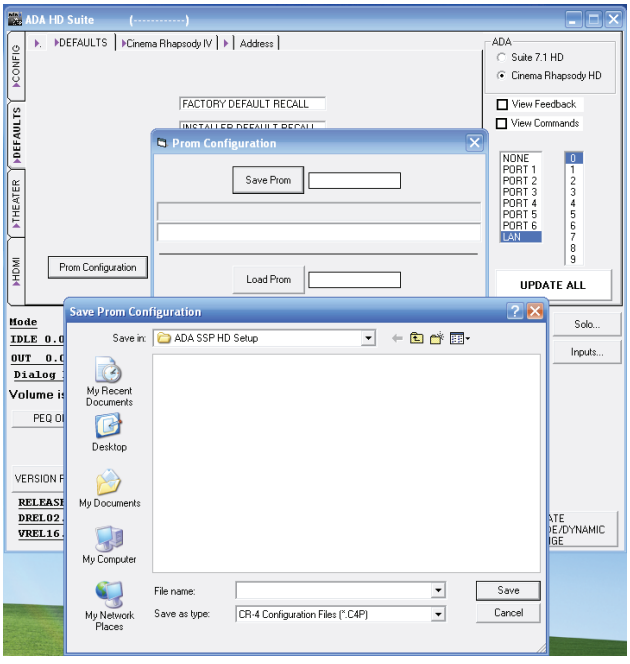



While the Input Configuration is saved as a .C43 file - containing input labels, AV jack links, defalut modes and input presets, the PROM file contains all the other aspects of the Cinema Rhapsody Mach 4. To numerous to mention, these features also should be preserved in a PC file (.C4P extension) as they can be recalled in the event of a problem. Alternately, they too can provide you a head start when configuring systems similar to each other.

ADA strongly recommends saving both files to your PC.

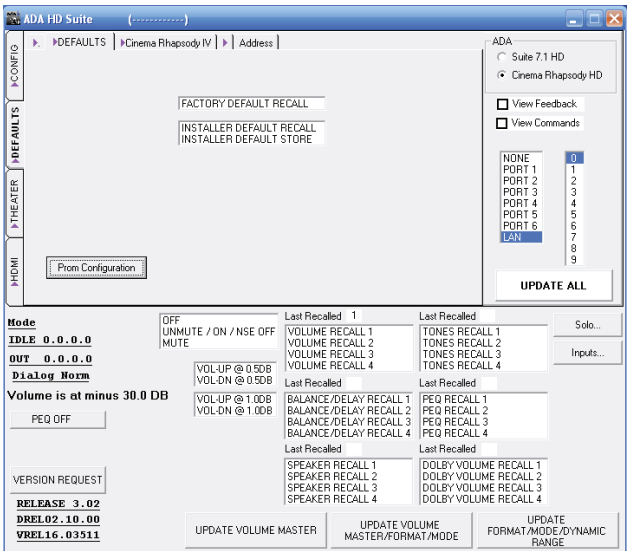
To save the PROM file, while on the Defaults side tab, select the Defaults top tab. Then press the PROM Configuration button. Again, a Save As window will appear in which you can navigate to a folder of your choosing. You can also name the file which will be assigned the .C4P suffix.

Use this same procedure to recall previously saved PROM files.



# Recalling Factory & Storing/Recalling Installer Defaults

The Cinema Rhapsody Mach 4 features both a Factory Default as well as an Installer Default. The Factory Default can be recalled in the event you wish to begin the process of setting up the Cinema Rhapsody Mach 4 from a clean start. Note that recalling the Factory Default does not reset the Installer Default, providing one was saved first.



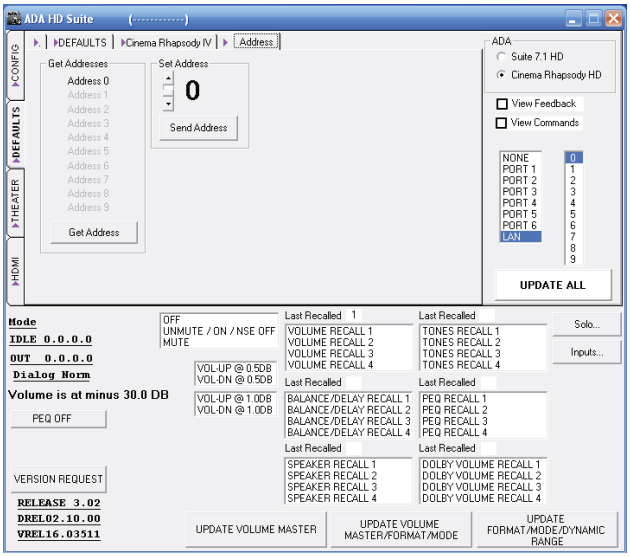

To recall the Factory Default is available only in the PC program. Simply press the Factory Default Recall button. The Cinema Rhapsody Mach 4 will reset and power down and then up. The factory default does not reset input configurations or the PEQ.

When you are done with your custom input configuration and setup, ADA strongly suggests saving your setup on the Installer Default. You can provide the Installer Default Recall button on a touchscreen or remote control so that in the event the system was tampered with inadvertently, your customer can reset the unit to the way you left the system. To store the Installer Default from the PC program, press the Installer Default Store button (also saving PEQ and input configurations).

To recall the Installer Default in the PC program, simply press the Installer Default Recall button. The Cinema Rhapsody Mach 4 will reset and power down and then up.

# ADA Bus Address, IR Receiver & Display Blanking

The Cinema Rhapsody Mach 4 features 9 potential ADA Bus Addresses such that a system with several Cinema Rhapsody Mach 4s can have each one on its own unique control address. The ADA Bus address can be changed from either the PC program or the setup menu of the Cinema Rhapsody Mach 4. Changing the Address takes place in real time - there is no loading of the new address. The most typical address for the Cinema Rhapsody Mach 4 is ADA Bus Address 0. A Factory Default reset will reset the unit to this address.




From the front panel of the Cinema Rhapsody Mach 4 while in the Setup Mode navigate to PRO SETUP using the Mode knob and press the knob. Turn the Mode knob to ADA Bus and press the Mode Knob. While on BUS ADDRESS, turning the Input knob changes the address.

The following are only set on the Cinema Rhapsody Mach 4.

**IR Receiver On & Off**

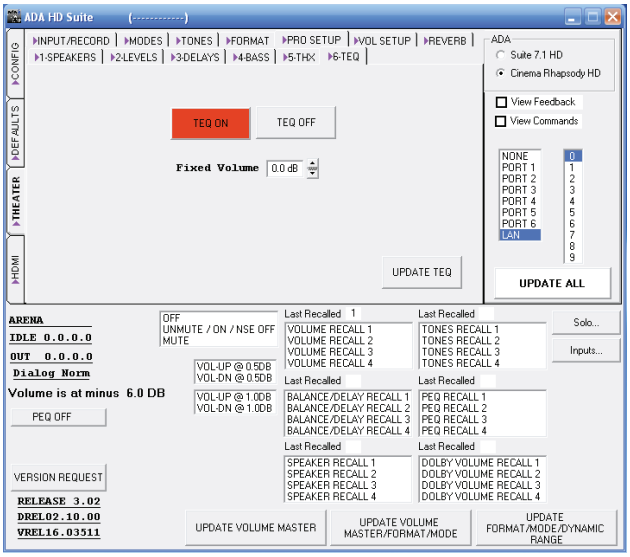
You can activate or deactivate the front panel IR receiver on the Cinema Rhapsody Mach 4. Generally, the receiver is deactivated so it does not interfere when these components are integrated into a control system. To turn the IR receiver On (or Off), turn the Mode knob to IRR and the turn the Input knob to set it ON or OFF.

**Display Blanking**

In the event you want the front panel display on the Cinema Rhapsody Mach 4 to turn off (blank out), you can set the blanking function between 0 and 60 seconds. Turn the Mode knob to BLANKING and the turn the input knob to set the blanking time. Turning any knob will illuminate the Cinema Rhapsody Mach 4 for the time set.

# TEQ Tracking

The Cinema Rhapsody Mach 4 is designed to operate in conjunction with ADA's TEQ series of Trinnov based room optimization equalizers. Because the TEQ sits in line between the Cinema Rhapsody Mach 4 and the power amplifiers and subwoofers, the goal in this portion of the setup is to have the TEQ become the device that controls Master Volume.




The Cinema Rhapsody Mach 4 enables you to engage TEQ Master Volume Control (TEQ ON). When this feature is engaged, the volume level being produced by the Cinema Rhapsody Mach 4 is 0 dB and is fixed. The front panel volume knob will then actually raise and lower volume levels in the TEQ as well as read back the volume information of the TEQ.

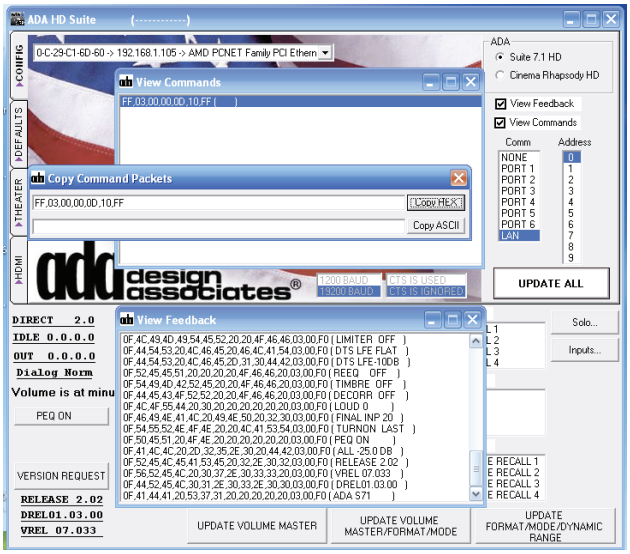
You can slightly adjust the Fixed Volume Level between 0 dB and -5 dB in 1/2 dB steps.

ADA strongly recommends engaging the TEQ function when combining the Cinema Rhapsody Mach 4 with the TEQ.

This feature can only be engaged and adjusted from the PC program.

# View HEX Commands & Feedback

The Cinema Rhapsody Mach 4 is controllable via HEX commands and also provides feedback in HEX that can be translated to ASCII. For each and every function described in this manual, there is a matching HEX command. This includes update requests (feedback updates) which in addition to an Update All command, include update requests specific to a function or section of functions thus keeping the incoming data stream shorter.




While commands are seven bytes in length with the first and last byte the FF clear buffer bytes, the second byte (03) refers the component type and the third byte (typically 00) is the unit address. The remaining three bytes change depending on the function command.

The PC program features a View Command check box which displays the HEX command. Double clicking on the command opens a Copy Command Packet's window in which permits you to copy and place the HEX command directly into a control system.

Feedback is a 16 byte string with the first byte 0F and the last byte F0 (clear buffer). For filtering purposes, the 14th byte is the unit type (03) and the fifteenth byte the unit address (typically 00). Bytes 2-13 are is the 12-character text feedback in HEX. Both the PC program and the front panel display translate this HEX feedback to ASCII.

The PC program features a View Feedback check box which opens a window that displays this feedback in ascending order. To the left is the 16 byte HEX string and to the left in parenthesis is the ASCII translation of bytes 2-13 (the feedback in English).

# HEX Codes for System Integration

Comments/Notes

All Commands below use 00 for the Unit Address number. When the unit address is changed, Byte number 6 (the Checksum Byte) increments by one step in Hex. For example, using the Discrete On Command on with the unit address changed to 01; the Checksum Byte changes to 26. The various commands below have been grouped together based on common function. On Off, Input Selection and Volume are together; Direct Mode and Mode related are together, etc. Some commands require settings that can only be made in the PC program. Sending the command without first defining the settings in the PC program will result in nothing happening at all or improper functioning of the unit.

| Command Name | Hex Command | On/Off, Volume and Input Related Commands |
|---|---|---|
| Discrete On/UnMute | FF, 03, 00, 01, 21, 25, FF | Turns System On to Default Souce or Last Used (set in software) or Unmutes |
| Power Off | FF, 03, 00, 01, 08, 0C, FF | Turns System Off |
| Mute | FF, 03, 00, 01, 22, 26, FF | Mutes Audio |
| Volume Up 1/2 dB | FF, 03, 00, 01, 37, 3B, FF | Raises Volume 1/2 dB at a time |
| Volume Down 1/2 dB | FF, 03, 00, 01, 38, 3C, FF | Lowers Volume 1/2 dB at a time |
| Volume Up 1 dB | FF, 03, 00, 01, 5A, 5E, FF | Raises Volume 1 dB at a time |
| Volume Down 1dB | FF, 03, 00, 01, 5B, 5F, FF | Lowers Volume 1 dB at a time |
| Volume Up 1/2 dB | FF, 03, 00, 01, 27, 2B, FF | Optimized for 1200 Baud/Feedback Delayed-Raises Volume 1/2 dB at a time |
| Volume Down 1/2 dB | FF, 03, 00, 01, 28, 2C, FF | Optimized for 1200 Baud/Feedback Delayed-Lowers Volume 1/2 dB at a time |
| Volume Up 1 dB | FF, 03, 00, 01, 29, 2D, FF | Optimized for 1200 Baud/Feedback Delayed-Raises Volume 1 dB at a time |
| Volume Down 1dB | FF, 03, 00, 01, 2A, 2E, FF | Optimized for 1200 Baud/Feedback Delayed-Lowers Volume 1 dB at a time |
| Input 1 | FF, 03, 00, 10, 70, 83, FF | Selects Input 1 (if unit is Off then this command will power the unit on and select source) |
| Input 2 | FF, 03, 00, 10, 71, 84, FF | Selects Input 2 (if unit is Off then this command will power the unit on and select source) |
| Input 3 | FF, 03, 00, 10, 72, 85, FF | Selects Input 3 (if unit is Off then this command will power the unit on and select source) |
| Input 4 | FF, 03, 00, 10, 73, 86, FF | Selects Input 4 (if unit is Off then this command will power the unit on and select source) |
| Input 5 | FF, 03, 00, 10, 74, 87, FF | Selects Input 5 (if unit is Off then this command will power the unit on and select source) |
| Input 6 | FF, 03, 00, 10, 75, 88, FF | Selects Input 6 (if unit is Off then this command will power the unit on and select source) |
| Input 7 | FF, 03, 00, 10, 76, 89, FF | Selects Input 7 (if unit is Off then this command will power the unit on and select source) |
| Input 8 | FF, 03, 00, 10, 77, 8A, FF | Selects Input 8 (if unit is Off then this command will power the unit on and select source) |
| Input 9 | FF, 03, 00, 10, 78, 8B, FF | Selects Input 9 (if unit is Off then this command will power the unit on and select source) |
| Input 10 | FF, 03, 00, 10, 79, 8C, FF | Selects Input 10 (if unit is Off then this command will power the unit on and select source) |
| Input 11 | FF, 03, 00, 10, 7A, 8D, FF | Selects Input 11 (if unit is Off then this command will power the unit on and select source) |
| Input 12 | FF, 03, 00, 10, 7B, 8E, FF | Selects Input 12 (if unit is Off then this command will power the unit on and select source) |
| Input 13 | FF, 03, 00, 10, 7C, 8F, FF | Selects Input 13 (if unit is Off then this command will power the unit on and select source) |
| Input 14 | FF, 03, 00, 10, 7D, 90, FF | Selects Input 14 (if unit is Off then this command will power the unit on and select source) |
| Input 15 | FF, 03, 00, 10, 7E, 91, FF | Selects Input 15 (if unit is Off then this command will power the unit on and select source) |
| Input 16 | FF, 03, 00, 10, 7F, 92, FF | Selects Input 16 (if unit is Off then this command will power the unit on and select source) |
| Input 17 | FF, 03, 00, 10, 80, 93, FF | Selects Input 17 (if unit is Off then this command will power the unit on and select source) |
| Input 18 | FF, 03, 00, 10, 81, 94, FF | Selects Input 18 (if unit is Off then this command will power the unit on and select source) |
| Input 19 | FF, 03, 00, 10, 82, 95, FF | Selects Input 19 (if unit is Off then this command will power the unit on and select source) |
| Input 20 | FF, 03, 00, 10, 83, 96, FF | Selects Input 20 (if unit is Off then this command will power the unit on and select source) |
| Optical 1 | FF, 03,00, 10, 70,83, FF | From the Input/Record Tab (on the Theater tab) of the PCOS Selects Input 1 |
| Optical 2 | FF, 03,00, 10, 71,84, FF | From the Input/Record Tab (on the Theater tab) of the PCOS Selects Input 2 |
| Digital 1 | FF, 03,00, 10, 72,85, FF | From the Input/Record Tab (on the Theater tab) of the PCOS Selects Input 3 |
| Digital 2 | FF, 03,00, 10, 73,86, FF | From the Input/Record Tab (on the Theater tab) of the PCOS Selects Input 4 |
| Digital 3 | FF, 03,00, 10, 74,87, FF | From the Input/Record Tab (on the Theater tab) of the PCOS Selects Input 5 |
| Digital 4 | FF, 03,00, 10, 75,88, FF | From the Input/Record Tab (on the Theater tab) of the PCOS Selects Input 6 |
| Digital 5 | FF, 03,00, 10, 76,89, FF | From the Input/Record Tab (on the Theater tab) of the PCOS Selects Input 7 |
| Digital 6 | FF, 03,00, 10, 77,8A, FF | From the Input/Record Tab (on the Theater tab) of the PCOS Selects Input 8 |
| Analog 1 | FF, 03,00, 10, 78,8B, FF | From the Input/Record Tab (on the Theater tab) of the PCOS Selects Input 9 |
| Analog 2 | FF, 03,00, 10, 79,8C, FF | From the Input/Record Tab (on the Theater tab) of the PCOS Selects Input 10 |
| Analog 3 | FF, 03,00, 10, 7A,8D, FF | From the Input/Record Tab (on the Theater tab) of the PCOS Selects Input 11 |
| Analog 4 | FF, 03, 00, 10, 7B, 8E, FF | From the Input/Record Tab (on the Theater tab) of the PCOS Selects Input 12 |
| HDMI 1 | FF, 03, 00, 10, 7C, 8F, FF | From the Input/Record Tab (on the Theater tab) of the PCOS Selects Input 13 |
| HDMI 2 | FF, 03, 00, 10, 7D, 90, FF | From the Input/Record Tab (on the Theater tab) of the PCOS Selects Input 14 |
| HDMI 3 | FF, 03, 00, 10, 7E, 91, FF | From the Input/Record Tab (on the Theater tab) of the PCOS Selects Input 15 |
| HDMI 4 | FF, 03, 00, 10, 7F, 92, FF | From the Input/Record Tab (on the Theater tab) of the PCOS Selects Input 16 |
| HDMI 5 | FF, 03,00, 10, 80,93, FF | From the Input/Record Tab (on the Theater tab) of the PCOS Selects Input 17 |
| HDMI 6 | FF, 03,00, 10, 81,94, FF | From the Input/Record Tab (on the Theater tab) of the PCOS Selects Input 18 |
| HDMI 7 | FF, 03,00, 10, 82,95, FF | From the Input/Record Tab (on the Theater tab) of the PCOS Selects Input 19 |
| HDMI 8 | FF, 03,00, 10, 83,96, FF | From the Input/Record Tab (on the Theater tab) of the PCOS Selects Input 20 |

| Command Name | Hex Command | On/Off, Volume and Input Related Commands |
|---|---|---|
| Volume Recall 1 | FF, 03, 00, 01, 89, 8D, FF | Recalls Volume level 1 as stored |
| Volume Recall 2 | FF, 03, 00, 01, 8A, 8E, FF | Recalls Volume level 2 as stored |
| Volume Recall 3 | FF, 03, 00, 01, 8B, 8F, FF | Recalls Volume level 3 as stored |
| Volume Recall 4 | FF, 03, 00, 01, 8C, 90, FF | Recalls Volume level 4 as stored |
| Volume Store 1 | FF, 03, 00, 01, 8D, 91, FF | Stores Volume level for Recall 1 |
| Volume Store 2 | FF, 03, 00, 01, 8E, 92, FF | Stores Volume level for Recall 2 |
| Volume Store 3 | FF, 03, 00, 01, 8F, 93, FF | Stores Volume level for Recall 3 |
| Volume Store 4 | FF, 03, 00, 01, 90, 94, FF | Stores Volume level for Recall 4 |
| Volume Limiter Up | FF, 03, 00, 10, D8, DC, FF | Increases the maximum master volume setting (up to + 27.5 dB-out of box default) |
| Volume Limiter Down | FF, 03, 00, 01, D9, DD, FF | Decreases the maximum allowable master volume setting |
| Turn On Volume Preset Up | FF, 03, 00, 01, DA, DE, FF | Increments through turn on Volume options: Vol Recall Presets 1 through 4 or Last Used |
| Turn On Volume Preset Dn | FF, 03, 00, 01, DB, DF, FF | Decrements through turn on Volume options: Vol Recall Presets 1 through 4 or Last Used |
| Final Input Up | FF, 03, 00, 01, DD, D1, FF | Increments through inputs and removes inputs from front display not being used. |
| Final Input Down | FF, 03, 00, 01, DE, D2, FF | Decrements through inputs and add inputs back to the front display that are being used |
| Turn On Input Up | FF, 03, 00, 10, E0, F3, FF | Increments through the inputs to choose the unit to power on to the specific input chosen |
| Turn On Input Down | FF, 03, 00, 10, E1, F4, FF | Decrements through the inputs to choose the input the unit powers on via Volume. knob. |
| Direct Volume Control | FF, 03, 00, 11, 01, FF | Will take unit directly to the specific volume 01 = -63.5 dB through B7 = +27.5 dB |
| Direct Volume Control | FF, 03, 00, 12, 01, FF | As above. Please note that hex value 00 = Volume Mute! Both commands must be sent |

| Command Name | Hex Command | New HDMI Specific Related Functions |
|---|---|---|
| HDMI 2-Ch Downmix On | FF, 03, 00, 15, 21, 39, FF | Sets HDMI Audio Output to 2-Channel Downmix for Direct Connection to a TV Monitor |
| HDMI 2-Ch Downmix Off | FF, 03, 00, 15, 20, 38, FF | Sets HDMI Audio Output back to Default |
| HDMI Input Equalizer 1 | FF, 03, 00, 15, 70, 88, FF | Optimizes HDMI Input Signal for long cable runs: HDMI Input 1 |
| HDMI Input Equalizer 2 | FF, 03, 00, 15, 71, 89, FF | Optimizes HDMI Input Signal for long cable runs: HDMI Input 2 |
| HDMI Input Equalizer 3 | FF, 03, 00, 15, 72, 8A, FF | Optimizes HDMI Input Signal for long cable runs: HDMI Input 3 |
| HDMI Input Equalizer 4 | FF, 03, 00, 15, 73, 8B, FF | Optimizes HDMI Input Signal for long cable runs: HDMI Input 4 |
| HDMI Input Equalizer 5 | FF, 03, 00, 15, 74, 8C, FF | Optimizes HDMI Input Signal for long cable runs: HDMI Input 5 |
| HDMI Input Equalizer 6 | FF, 03, 00, 15, 75, 8D, FF | Optimizes HDMI Input Signal for long cable runs: HDMI Input 6 |
| HDMI Input Equalizer 7 | FF, 03, 00, 15, 76, 8E, FF | Optimizes HDMI Input Signal for long cable runs: HDMI Input 7 |
| HDMI Input Equalizer 8 | FF, 03, 00, 15, 77, 8F, FF | Optimizes HDMI Input Signal for long cable runs: HDMI Input 8 |
| TMDS 1 | FF, 03, 00, 15, 78, 90, FF | Optimizes HDMI Output Signal for long cable runs: HDMI Output 1 |
| TMDS 2 | FF, 03, 00, 15, 79, 91, FF | Optimizes HDMI Output Signal for long cable runs: HDMI Output 2 |
| Comm And 11 | FF, 03, 00, 15, 56, 6E, FF | Unknown |

| Command Name | Hex Command | Reverb Settings for Cinema, Club, Hall, Arena, Cathedral, Quad Rev Modes |
|---|---|---|
| Cinema | FF, 03, 00, 14, 00, 17, FF | Selects Cinema Mode to Adjust Reverb Settings (for both 2-Channel and Multi-Channel) |
| Club | FF, 03, 00, 14, 01, 18, FF | Selects Club Mode to Adjust Reverb Settings (for both 2-Channel and Multi-Channel) |
| Hall | FF, 03, 00, 14, 02, 19, FF | Selects Hall Mode to Adjust Reverb Settings (for both 2-Channel and Multi-Channel) |
| Arena | FF, 03, 00, 14, 03, 1A, FF | Selects Arena Mode to Adjust Reverb Settings (for both 2-Channel and Multi-Channel) |
| Cathedral | FF, 03, 00, 14, 04, 1B, FF | Selects Cathedral Mode to Adjust Reverb Settings (for both 2-Channel & Multi-Channel) |
| Quad Reverb | FF, 03, 00, 14, 05, 1C, FF | Selects Quad Reverb Mode to Adjust Reverb Settings (for 2-Channel & Multi-Channel) |
| Recall Defaults | FF, 03, 00, 15, E0, E8, FF | Recalls Default Reverb Settings for any of the Selected Modes Above |

| Command Name | Hex Command | Speaker Size, Noise/Levels/Balance, Delays and Tone setting Commands |
|---|---|---|
| Center None | FF, 03, 00, 01, 51, 55, FF | Turns Center Speaker Off |
| Center Small | FF, 03, 00, 01, 52, 56, FF | Sets Center Speaker to Small |
| Center Large | FF, 03, 00, 01, 53, 57, FF | Sets Center Speaker to Large |
| Center Crossover Freq Up | FF, 03, 00, 15, 03, 1B, FF | Adjusts Center Crossover Frequency Up |
| Center Crossover Freq Down | FF, 03, 00, 15, 04, 1C, FF | Adjusts Center Crossover Frequency Down |
| Front Small | FF, 03, 00, 01, 4F, 53, FF | Sets Front Left and Right Speakers to Small |
| Front Large | FF, 03, 00, 01, 50, 54, FF | Sets Front Left and Right Speakers to Large |
| Front Crossover Freq Up | FF, 03, 00, 15, 01, 19, FF | Adjusts Front Crossover Frequency Up |
| Front Crossover Freq Down | FF, 03, 00, 15, 02, 1A, FF | Adjusts Front Crossover Frequency Down |
| Subwoofer No (Off) | FF, 03, 00, 01, 57, 5B, FF | Turns Subwoofer Off |
| Subwoofer Yes (On) | FF, 03, 00, 01, 58, 5C, FF | Turns Subwoofer On |
| Sub Crossover Freq Up | FF, 03, 00, 15, 01, 19, FF | Adjusts Subwoofer Crossover Frequency Up |
| Sub Crossover Freq Down | FF, 03, 00, 15, 02, 1A, FF | Adjusts Subwoofer Crossover Frequency Down |
| Surrounds None | FF, 03, 00, 01, 54, 58, FF | Turns the Left and Right Surround Speakers Off |
| Surrounds Small | FF, 03, 00, 01, 55, 59, FF | Sets the Left and Right Surround Speakers to Small |
| Surrounds Large | FF, 03, 00, 01, 56, 6A, FF | Sets the Left and Right Surround Speakers to Large |
| Surround Crossover Freq Up | FF, 03, 00, 15, 05, 1D, FF | Adjusts Surround Crossover Frequency Up |
| Surround Crossover Freq Dn | FF, 03, 00, 15, 06, 1E, FF | Adjusts Surround Crossover Frequency Down |
| Back None | FF, 03, 00, 01, 6D, 71, FF | Turns the Left and Right Back Surround Speakers Off |
| Back 1 Speaker-Auto Size | FF, 03, 00, 01, 6E, 72, FF | Turns on only the Left Back Surround speaker; sets size to the same as Surround L/R |
| Back 2 Speakers-Auto Size | FF, 03, 00, 01, 6F, 73, FF | Turns on both the Left & Right Back Surround speakers; sets Size same as Surround L/R |
| Back 1 Small | FF, 03, 00, 01, 72, 76, FF | Turns on only the Left Back Surround speaker and sets to Small |

| | | |
|---|---|---|
| Back 1 Large | FF, 03, 00, 01, 70, 74, FF | Turns on only the Left Back Surround speaker and sets to Large |
| Back 2 Small | FF, 03, 00, 01, 73, 77, FF | Turns on both the Left and Right Back Surround speakers and sets to Small |
| Back 2 Large | FF, 03, 00, 01, 71, 75, FF | Turns on both the Left and Right Back Surround speakers and sets to Large |
| Back Crossover Freq Up | FF, 03, 00, 15, 07, 1F, FF | Adjusts Back Crossover Frequency Up |
| Back Crossover Freq Dn | FF, 03, 00, 15, 08, 20, FF | Adjusts Back Crossover Frequency Down |
| Track Crossover Freq Up | FF, 03, 00, 01, 7D, 81, FF | Adjusts Crossover Frequency Tracking Up |
| Track Crossover Freq Dn | FF, 03, 00, 01, 7E, 82, FF | Adjusts  Crossover Frequency Tracking Down |
| Boundary Gain On | FF, 03, 00, 01, 4D, 51, FF | Turns on Boundary Gain (for Surround Back speakers) |
| Boundary Gain Off | FF, 03, 00, 01, 4C, 50, FF | Turns off Boundary Gain (for Surround Back speakers) |
| Back Speakers: > 12" | FF, 03, 00, 01, 85, 89, FF | When Boundary Gain is on Adjusts BG for distance between Surround Back speakers |
| Back Speakers: 12-48" | FF, 03, 00, 01, 86, 8A, FF | When Boundary Gain is on Adjusts BG for distance between Surround Back speakers |
| Back Speakers: < 48" | FF, 03, 00, 01, 87, 8B, FF | When Boundary Gain is on Adjusts BG for distance between Surround Back speakers |
| LFE Attenuation Enable | FF, 03, 00, 01, CA, CE, FF | Turns LFE Attenuation On for DTS Only |
| LFE Attenuation Disable | FF, 03, 00, 01, CB, CF, FF | Turns LFE Attenuation Off for DTS Only |
| LFE Attenuation Up | FF, 03, 00, 01, E0, E4, FF | Increments LFE Attenuation when enabled for DTS Only |
| LFE Attenuation Down | FF, 03, 00, 01, E1, E5, FF | Decrements LFE Attenuation when enabled for DTS Only |
| Speaker Recall 1 | FF, 03, 00, 13, 86, 9C, FF | Recalls Speaker Size Setting 1-only valid w/Advanced Speaker Option is selected by PC |
| Speaker Recall 2 | FF, 03, 00, 13, 87, 9D, FF | Recalls Speaker Size Setting 2-only valid w/Advanced Speaker Option is selected by PC |
| Speaker Recall 3 | FF, 03, 00, 13, 88, 9E, FF | Recalls Speaker Size Setting 3-only valid w/Advanced Speaker Option is selected by PC |
| Speaker Recall 4 | FF, 03, 00, 13, 89, 9E, FF | Recalls Speaker Size Setting 4-only valid w/Advanced Speaker Option is selected by PC |
| Speaker Store 1 | FF, 03, 00, 13, 8A, A0, FF | Stores Speaker Size Setting 1-only valid w/Advanced Speaker Option is selected by PC |
| Speaker Store 2 | FF, 03, 00, 13, 8B, A1, FF | Stores Speaker Size Setting 1-only valid w/Advanced Speaker Option is selected by PC |
| Speaker Store 3 | FF, 03, 00, 13, 8C, A2, FF | Stores Speaker Size Setting 1-only valid w/Advanced Speaker Option is selected by PC |
| Speaker Store 4 | FF, 03, 00, 13, 8D, A3, FF | Stores Speaker Size Setting 1-only valid w/Advanced Speaker Option is selected by PC |
| Noise Sequence | FF, 03, 00, 01, 2E, 32, FF | Starts Noise Generator Sequence (from Left though Sub-in order as noted below) |
| Noise Advance | FF, 03, 00, 01, 2F, 33, FF | When choosing any of the direct noise options below, moves to the next speaker |
| Noise Left | FF, 03, 00, 01, 30, 34, FF | Generates noise for the Left speaker only |
| Noise Right | FF, 03, 00, 01, 31, 35, FF | Generates noise for the Right speaker only |
| Noise Left Surround | FF, 03, 00, 01, 32, 36, FF | Generates noise for the Left Surround speaker only |
| Noise Right Surround | FF, 03, 00, 01, 33, 37, FF | Generates noise for the Right Surround speaker only |
| Noise Center | FF, 03, 00, 01, 34, 38, FF | Generates noise for the Center speaker only |
| Noise Surround Back Left | FF, 03, 00, 01, 35, 39, FF | Generates noise for the Surround Back Left speaker only |
| Noise Surround Back Right | FF, 03, 00, 01, 36, 3A, FF | Generates noise for the Surround Back Right speaker only |
| Noise Sub | FF, 03, 00, 01, 59, 5D, FF | Generates noise for the Subwoofer only |
| Noise Test Off | FF, 03, 00, 01, 21, 25, FF | Same command as line 13, Turns off the noise generator mode when in this mode |
| Subwoofer Manager Noise | FF, 03, 00, 01, C9, CD, FF | Turns on noise for the Subwoofer the adjust Limiter Ceiling |
| Increase Limiter Ceiling | FF, 03, 00, 01, CC, D0, FF | Increases the limiter ceiling for the Subwoofer (in dB) against the master volume |
| Decrease Limiter Ceiling | FF, 03, 00, 01, CD, D1, FF | Decreases the limiter ceiling for the Subwoofer (in dB) against the master volume |
| Center Speaker Level Up | FF, 03, 00, 01, 3B, 3F, FF | Adjusts Center Speaker Level Up-Above Master Volume Level for unit (in dB) |
| Center Speaker Level Down | FF, 03, 00, 01, 3C, 40, FF | Adjusts Center Speaker Level Down-Below Master Volume Level for unit (in dB) |
| Left Speaker Level Up | FF, 03, 00, 01, 39, 3D, FF | Adjusts Left Speaker Level Up-Above Master Volume Level for unit (in dB) |
| Left Speaker Level Down | FF, 03, 00, 01, 3A, 3E, FF | Adjusts Left Speaker Level Down-Below Master Volume Level for unit (in dB) |
| Right Speaker Level Up | FF, 03, 00, 01, 3D, 41, FF | Adjusts Right Speaker Level Up-Above Master Volume Level for unit (in dB) |
| Right Speaker Level Down | FF, 03, 00, 01, 3E, 42, FF | Adjusts Right Speaker Level Down-Below Master Volume Level for unit (in dB) |
| Front Speaker Levels Up | FF, 03, 00, 13, 76, 8C, FF | Adjusts Left and Right Speaker Levels Up-Above Master Volume Level for unit (in dB) |
| Front Speaker Levels Down | FF, 03, 00, 13, 77, 8D, FF | Adjusts Left and Right Speaker Levels Down-Below Master Volume Level for unit (in dB) |
| Subwoofer Level Up | FF, 03, 00, 13, 43, 47, FF | Adjusts Subwoofer Speaker Level Up |
| Subwoofer Level Down | FF, 03, 00, 13, 44, 48, FF | Adjusts Subwoofer Speaker Level Down |
| Left Surr. Speaker Level Up | FF, 03, 00, 01, 3F, 43, FF | Adjusts Left Surround Speaker Level Up-Above Master Volume Level for unit (in dB) |
| Left Surr. Speaker Level Up | FF, 03, 00, 01, 40, 44, FF | Adjusts Left Surround Speaker Level Down-Below Master Volume Level for unit (in dB) |
| Right Surr. Speaker Level Up | FF, 03, 00, 01, 41, 45, FF | Adjusts Right Surround Speaker Level Up-Above Master Volume Level for unit (in dB) |
| Right Surr. Speaker Level Dn | FF, 03, 00, 01, 42, 46, FF | Adjusts Right Surround Speaker Level Down-Below Master Volume Level for unit (in dB) |
| Surround Speaker Levels Up | FF, 03, 00, 13, 78, 8E, FF | Adjusts Left & Right Surround Speaker Levels Up-Above Master Vol. Level for unit (dB) |
| Surround Speaker Levels Dn | FF, 03, 00, 13, 79, 8F, FF | Adjusts Left & Right Surrond Speaker Levels Down-Below Master Vol. Level for unit (dB) |
| Surr. Back Left Level Up | FF, 03, 00, 01, 45, 49, FF | Adjusts Left Surround Back Speaker Level Up-Above Master Volume Level for unit (dB) |
| Surr. Back Left Level Dn | FF, 03, 00, 01, 46, 4A, FF | Adjusts Left Surround Back Speaker Level Down-Below Master Volume Level for unit (dB) |
| Surr. Back Right Level Up | FF, 03, 00, 01, 47, 4B, FF | Adjusts Right Surround Back Speaker Level Up-Above Master Volume Level for unit (dB) |
| Surr. Back Right Level Dn | FF, 03, 00, 01, 48, 4C, FF | Adjusts Right Surround Back Speaker Level Down-Below Master Volume Level for unit (dB) |
| Surround Back Levels Up | FF, 03, 00, 13, 7A, 90, FF | Adjusts Left and Right Surround Back Speaker Levels Up-Above Master Vol. Level (dB) |
| Surround Back Levels Up | FF, 03, 00, 13, 7B, 91 FF | Adjusts Left & Right Surround Back Speaker Levels Down-Below Master Vol. Level (dB) |
| Solo Center | FF, 03, 00, 01, 99, 9D, FF | When playing audio plays audio only from the Center speaker |
| Solo Left | FF, 03, 00, 01, 9B, 9F, FF | When playing audio plays audio only from the Left speaker |
| Solo Right | FF, 03, 00, 01, 9C, A0, FF | When playing audio plays audio only from the Right speaker |
| Solo Left and Right | FF, 03, 00, 10, 2B, 3E, FF | When playing audio plays audio only from the Left and Right speakers |
| Solo Subwoofer | FF, 03, 00, 01, 9A, 9E, FF | When playing audio plays audio only from the Subwoofer |
| Solo Left Surround | FF, 03, 00, 01, 9D, A1, FF | When playing audio plays audio only from the Left Surround speaker |
| Solo Right Surround | FF, 03, 00, 01, 9E, A2, FF | When playing audio plays audio only from the Right Surround speaker |

| | | |
|---|---|---|
| Solo Left and Right Surround | FF, 03, 00, 01, 9F, A3, FF | When playing audio plays audio only from the Left and Right Surround speakers |
| Solo Surround Back Left | FF, 03, 00, 01, A0, A4, FF | When playing audio plays audio only from the Surround Back Left speaker |
| Solo Surround Back Right | FF, 03, 00, 01, A1, A5, FF | When playing audio plays audio only from the Surround Back Right speaker |
| Solo Surr.Back Left and Right | FF, 03, 00, 10, 2C, 3F, FF | When playing audio plays audio only from the Surround Back Left and Right speakers |
| Solo All Surrounds | FF, 03, 00, 10, 2D, 40, FF | When playing audio plays audio only from all fo the Surround Speakers |
| Solo Test Off | FF, 03, 00, 01, 21, 25, FF | Same command as line 13, Turns Off the Solo Test mode when in this mode. |
| Balance Recall 1 | FF, 03, 00, 01, 91, 95, FF | Recalls Balance settings 1 as stored |
| Balance Recall 2 | FF, 03, 00, 01, 92, 96, FF | Recalls Balance settings 2 as stored |
| Balance Recall 3 | FF, 03, 00, 01, 93, 97, FF | Recalls Balance settings 3 as stored |
| Balance Recall 4 | FF, 03, 00, 01, 94, 98, FF | Recalls Balance settings 4 as stored |
| Balance Store 1 | FF, 03, 00, 01, 95, 99, FF | Stores Balance settings for Recall 1 |
| Balance Store 2 | FF, 03, 00, 01, 96, 9A, FF | Stores Balance settings for Recall 2 |
| Balance Store 3 | FF, 03, 00, 01, 97, 9B, FF | Stores Balance settings for Recall 3 |
| Balance Store 4 | FF, 03, 00, 01, 98, 9C, FF | Stores Balance settings for Recall 4 |
| Center Delay Up | FF, 03, 00, 01, 5F, 63, FF | Increases the Delay time for the Center speaker (in feet) |
| Center Delay Down | FF, 03, 00, 01, 60, 64, FF | Decreases the Delay time for the Center speaker (in feet) |
| Left Delay Up | FF, 03, 00, 01, 5D, 61, FF | Increases the Delay time for the Left speaker (in feet) |
| Left Delay Down | FF, 03, 00, 01, 5E, 62, FF | Decreases the Delay time for the Left speaker (in feet) |
| Right Delay Up | FF, 03, 00, 01, 61, 65, FF | Increases the Delay time for the Right speaker (in feet) |
| Right Delay Down | FF, 03, 00, 01, 62, 66, FF | Decreases the Delay time for the Right speaker (in feet) |
| Subwoofer Delay Up | FF, 03, 00, 01, 67, 6B, FF | Increases the Delay time for the Subwoofer (in feet) |
| Subwoofer Delay Down | FF, 03, 00, 01, 68, 6C, FF | Decreases the Delay time for the Subwoofer speaker (in feet) |
| Left Surround Delay Up | FF, 03, 00, 01, 63, 67, FF | Increases the Delay time for the Left Surround speaker (in feet) |
| Left Surround Delay Down | FF, 03, 00, 01, 64, 68, FF | Decreases the Delay time for the Left Surround speaker (in feet) |
| Right Surround Delay Up | FF, 03, 00, 01, 65, 69, FF | Increases the Delay time for the Right Surround speaker (in feet) |
| Right Surround Delay Down | FF, 03, 00, 01, 66, 6A, FF | Decreases the Delay time for the Right Surround speaker (in feet) |
| Left Back Surround Delay Up | FF, 03, 00, 01, 69, 6D, FF | Increases the Delay time for the Left Back Surround speaker (in feet) |
| Left Back Surr. Delay Down | FF, 03, 00, 01, 6A, 6E, FF | Decreases the Delay time for the Left Back Surround speaker (in feet) |
| Right Back Surr.Delay Up | FF, 03, 00, 01, 6B, 6F, FF | Increases the Delay time for the Right Back Surround speaker (in feet) |
| Right Back Surr. Delay Down | FF, 03, 00, 01, 6C, 70, FF | Decreases the Delay time for the Right Back Surround speaker (in feet) |
| Tone Group A-Left | FF, 03, 00, 01, A3, A7, FF | Include or Exclude Left Speaker in Tone Group A-Toggle Command |
| Tone Group A-Right | FF, 03, 00, 01, A4, A8, FF | Include or Exclude Right Speaker in Tone Group A-Toggle Command |
| Tone Group A-Left Surr. | FF, 03, 00, 01, A5, A9, FF | Include or Exclude Left Surround Speaker in Tone Group A-Toggle Command |
| Tone Group A-Right Surr. | FF, 03, 00, 01, A6, AA, FF | Include or Exclude Right Surround Speaker in Tone Group A-Toggle Command |
| Tone Group A-Center | FF, 03, 00, 01, A7, AB, FF | Include or Exclude Center Speaker in Tone Group A-Toggle Command |
| Tone Group A-Subwoofer | FF, 03, 00, 01, A8, AC, FF | Include or Exclude Subwoofer in Tone Group A-Toggle Command |
| Tone Group A-Back Left | FF, 03, 00, 01, A9, AD, FF | Include or Exclude Back Left Surround Speaker in Tone Group A-Toggle Command |
| Tone Group A-Back Right | FF, 03, 00, 01, AA, AE, FF | Include or Exclude Back Right Surround Speaker in Tone Group A-Toggle Command |
| Treble Freq Up Tone Group A | FF, 03, 00, 01, AB, AF, FF | Adjusts Treble Frequency for Tone Group A Up (in kHz) |
| Treble Freq Dn Tone Group A | FF, 03, 00, 01, AC, B0, FF | Adjusts Treble Frequency for Tone Group A Down (in kHz) |
| Treble Level Up Tone Group A | FF, 03, 00, 01, AD, B1, FF | Adjusts Treble Level for frequency set above in Tone Group A Up (in dB) |
| Treble Level Dn Tone Group A | FF, 03, 00, 01, AE, B2, FF | Adjusts Treble Level for frequency set above in Tone Group A Down (in dB) |
| Bass Freq Up Tone Group A | FF, 03, 00, 01, AF, B3, FF | Adjusts Bass Frequency for Tone Group A Up (in Hz) |
| Bass Freq Dn Tone Group A | FF, 03, 00, 01, B0, B4, FF | Adjusts Bass Frequency for Tone Group A Down (in Hz) |
| Bass Level Up Tone Group A | FF, 03, 00, 01, B1, B5, FF | Adjusts Bass Level for frequency set above in Tone Group A Up (in dB) |
| Bass Level Dn Tone Group A | FF, 03, 00, 01, B2, B6, FF | Adjusts Bass Level for frequency set above in Tone Group A Down (in dB) |
| Tone Group B-Left | FF, 03, 00, 01, B4, B8, FF | Include or Exclude Left Speaker in Tone Group A-Toggle Command |
| Tone Group B-Right | FF, 03, 00, 01, B5, B9, FF | Include or Exclude Right Speaker in Tone Group A-Toggle Command |
| Tone Group B-Left Surr. | FF, 03, 00, 01, B6, BA, FF | Include or Exclude Left Surround Speaker in Tone Group A-Toggle Command |
| Tone Group B-Right Surr. | FF, 03, 00, 01, B7, BB, FF | Include or Exclude Right Surround Speaker in Tone Group A-Toggle Command |
| Tone Group B-Center | FF, 03, 00, 01, B8, BC, FF | Include or Exclude Center Speaker in Tone Group A-Toggle Command |
| Tone Group B-Subwoofer | FF, 03, 00, 01, B9, BD, FF | Include or Exclude Subwoofer in Tone Group A-Toggle Command |
| Tone Group B-Back Left | FF, 03, 00, 01, BA, BE, FF | Include or Exclude Back Left Surround Speaker in Tone Group A-Toggle Command |
| Tone Group B-Back Right | FF, 03, 00, 01, BB, BF, FF | Include or Exclude Back Right Surround Speaker in Tone Group A-Toggle Command |
| Treble Freq Up Tone Group B | FF, 03, 00, 01, BC, C0, FF | Adjusts Treble Frequency for Tone Group B Up (in kHz) |
| Treble Freq Dn Tone Group B | FF, 03, 00, 01, BD, C1, FF | Adjusts Treble Frequency for Tone Group B Down (in kHz) |
| Treble Level Up Tone Grp B | FF, 03, 00, 01, BE, C2, FF | Adjusts Treble Level for frequency set above in Tone Group B Up (in dB) |
| Treble Level Dn Tone Grp B | FF, 03, 00, 01, BF, C3, FF | Adjusts Treble Level for frequency set above in Tone Group B Down (in dB) |
| Bass Freq Up Tone Group B | FF, 03, 00, 01, C0, C4, FF | Adjusts Bass Frequency for Tone Group B Up (in Hz) |
| Bass Freq Dn Tone Group B | FF, 03, 00, 01, C1, C5, FF | Adjusts Bass Frequency for Tone Group B Down (in Hz) |
| Bass Level Up Tone Group B | FF, 03, 00, 01, C2, C6, FF | Adjusts Bass Level for frequency set above in Tone Group B Up (in dB) |
| Bass Level Dn Tone Group B | FF, 03, 00, 01, C3, C7, FF | Adjusts Bass Level for frequency set above in Tone Group B Down (in dB) |
| Tones Recall 1 | FF, 03, 00, 01, D0, D4, FF | Recalls Tones settings 1 as stored (both Tone Groups A & B) |
| Tones Recall 2 | FF, 03, 00, 01, D1, D5, FF | Recalls Tones settings 2 as stored (both Tone Groups A & B) |
| Tones Recall 3 | FF, 03, 00, 01, D2, D6, FF | Recalls Tones settings 3 as stored (both Tone Groups A & B) |
| Tones Recall 4 | FF, 03, 00, 01, D3, D7, FF | Recalls Tones settings 4 as stored (both Tone Groups A & B) |
| Tones Store 1 | FF, 03, 00, 01, D4, D8, FF | Stores Tones settings for Recall 1 (both Tone Groups A & B) |

| | | |
|---|---|---|
| Tones Store 2 | FF, 03, 00, 01, D5, D9, FF | Stores Tones settings for Recall 2 (both Tone Groups A & B) |
| Tones Store 3 | FF, 03, 00, 01, D6, DA, FF | Stores Tones settings for Recall 3 (both Tone Groups A & B) |
| Tones Store 4 | FF, 03, 00, 01, D7, DB, FF | Stores Tones settings for Recall 4 (both Tone Groups A & B) |

| **Command Name** | **Hex Command** | **Direct Mode Selection and all Mode Related Commands** |
|---|---|---|
| Mode Scroll Up | FF, 03, 00, 10, 2E, 41, FF | Increments through all available modes in current playback mode (2 Ch. or Multi-Ch. Mode) |
| Scroll Down | FF, 03, 00, 10, 2F, 42, FF | Decrements through all available modes in current playback mode (2 Ch. or Multi-Ch. Mode) |
| THX | FF, 03, 00, 10, 6B, 7E, FF | If THX is not selected & the current mode has +THX option, turns on THX/Changes mode |
| User Mode | FF, 03, 00, 10, 6C, 7F, FF | Goes directly to specific mode for current playback mode as determined in PC Set-Up |
| Stereo | FF, 03, 00, 10, 6D, 80, FF | Goes directly to Stereo Mode (2 Channel Only) |
| Mono | FF, 03, 00, 10, 6E, 81, FF | Goes directly to Mono Mode (2 Channel Only) |
| Direct 5.1 | FF, 03, 00, 13, 70, 86, FF | Goes directly to 5.1 Bypass Mode (direct via RCA inputs on back of unit) |
| Direct 7.1 | FF, 03, 00, 13, 71, 87, FF | Goes directly to 7.1 Bypass Mode (direct via RCA inputs on back of unit) |
| Direct 2.0 | FF, 03, 00, 10, 65, 78, FF | Direct Mode Selection-No Subwoofer (2 Channel Only Mode) |
| Stereo | FF, 03, 00, 10, 48, 5B, FF | Direct Mode Selection-Sub only if Left/Right Speakers are Small (2 Channel Only Mode) |
| Mono | FF, 03, 00, 10, 49, 5C, FF | Direct Mode Selection-Center Channel Only (2 Channel Only Mode) |
| DTS Neo:6 3-Channel | FF, 03, 00, 13, 50, 66, FF | Direct Mode Selection-Left, Center Right Only (2-Channel Mode) |
| DTS Neo:6 Phantom | FF, 03, 00, 13, 51, 67, FF | Direct Mode Selection-No Center Channel (2-Channel Mode) |
| DTS Neo:6 5-Channel | FF, 03, 00, 13, 52, 68, FF | Direct Mode Selection-No Surround Back Channels (2-Channel Mode) |
| DTS Neo:6 Movie | FF, 03, 00, 10, 4A, 5D, FF | Direct Mode Selection-Optimized for Movies (2-Channel Mode) |
| DTS Neo:6 Movie +THX | FF, 03, 00, 10, 4B, 5E, FF | Direct Mode Selection-Optimized for Movies; THX Enhancements added (2-Ch. Mode) |
| DTS Neo:6 Music | FF, 03, 00, 13, 53, 69, FF | Direct Mode Selection-Optimized for Music (2-Channel Mode) |
| Dolby Pro Logic 3-Channel | FF, 03, 00, 10, 63, 76, FF | Direct Mode Selection-Left, Center Right Only (2-Channel Mode) |
| Dolby Pro Logic Phantom | FF, 03, 00, 10, 64, 77, FF | Direct Mode Selection-No Center Channel (2-Channel Mode) |
| Dolby Pro Logic | FF, 03, 00, 10, 4C, 5F, FF | Direct Mode Selection-The "original" Dolby Processing Mode (2-Channel Mode) |
| Dolby Pro Logic + THX | FF, 03, 00, 10, 4D, 60, FF | Direct Mode Selection-The "original" Dolby Processing Mode with THX (2-Channel Mode) |
| Dolby Pro Logic II Matrix | FF, 03, 00, 10, 50, 63, FF | Direct Mode Selection-the new standard Dolby mode Pro Logic II Mode (2-Channel Mode) |
| Dolby Pro Logic II Game | FF, 03, 00, 13, 54, 6A, FF | Direct Mode Selection-Optimized for Games (2-Channel Mode) |
| Dolby Pro Logic II Music | FF, 03, 00, 10, 52, 65, FF | Direct Mode Selection-Optimized for Music (2-Channel Mode) |
| Dolby Pro Logic II Movie | FF, 03, 00, 10, 4E, 61, FF | Direct Mode Selection-Optimized for Movies (2-Channel Mode) |
| Dolby Pro Logic II Movie/THX | FF, 03, 00, 10, 4F, 62, FF | Direct Mode Selection-Optimized for Movies; THX Enhancements added (2-Ch. Mode) |
| Dolby Pro Logic II Custom 1 | FF, 03, 00, 10, 53, 66, FF | Direct Mode Selection-with Custom settings from PC Set-up (2-Channel Mode) |
| Dolby Pro Logic II Cust 1/THX | FF, 03, 00, 10, 54, 67, FF | Direct Mode Selection-with Custom settings from PC Set-up and THX (2-Channel Mode) |
| Dolby Pro Logic II Custom 2 | FF, 03, 00, 10, 55, 68, FF | Direct Mode Selection-with Custom settings from PC Set-up (2-Channel Mode) |
| Dolby Pro Logic II Cust 2/THX | FF, 03, 00, 10, 56, 69, FF | Direct Mode Selection-with Custom settings from PC Set-up and THX (2-Channel Mode) |
| Dolby Pro Logic II Custom 3 | FF, 03, 00, 10, 57, 6A, FF | Direct Mode Selection-with Custom settings from PC Set-up (2-Channel Mode) |
| Dolby Pro Logic II Cust 3/THX | FF, 03, 00, 10, 58, 6B, FF | Direct Mode Selection-with Custom settings from PC Set-up and THX (2-Channel Mode) |
| AGL Enhanced | FF, 03, 00, 10, 51, 64, FF | Direct Mode Selection-Custom AGL Designed ADA mode (2-Channel Mode) |
| Quad Bypass | FF, 03, 00, 10, 59, 6C, FF | Direct Mode Selection-Custom AGL Designed ADA mode (2-Channel Mode) |
| Stereo Enhance | FF, 03, 00, 10, 5A, 6D, FF | Direct Mode Selection-with settings adjustable in PC Set-Up (2-Channel Mode) |
| Mono Enhance | FF, 03, 00, 10, 5B, 6E, FF | Direct Mode Selection-with settings adjustable in PC Set-Up (2-Channel Mode) |
| Stereo 5 | FF, 03, 00, 10, 5C, 6F, FF | Direct Mode Selection (2-Channel Mode) |
| Mono 5 | FF, 03, 00, 10, 5D, 70, FF | Direct Mode Selection (2-Channel Mode) |
| Cinema | FF, 03, 00, 14, 00, 17, FF | Direct Mode Selection (2-Channel Mode - New for 7.1 HD) |
| Club | FF, 03, 00, 14, 01, 18, FF | Direct Mode Selection (2-Channel Mode - New for 7.1 HD) |
| Hall | FF, 03, 00, 14, 02, 19, FF | Direct Mode Selection (2-Channel Mode - New for 7.1 HD) |
| Arena | FF, 03, 00, 14, 03, 1A, FF | Direct Mode Selection (2-Channel Mode - New for 7.1 HD) |
| Cathedral | FF, 03, 00, 14, 04, 1B, FF | Direct Mode Selection (2-Channel Mode - New for 7.1 HD) |
| Quad Reverb | FF, 03, 00, 14, 05, 1C, FF | Direct Mode Selection (2-Channel Mode - New for 7.1 HD) |
| Direct 7.1 | FF, 03, 00, 13, 2D, 43, FF | Direct Mode Selection-via Multi Channel Analog RCA inputs (no processing) |
| Downmix Stereo | FF, 03, 00, 10, 30, 43, FF | Direct Mode Selection-Left and Right channels Only (Multi-Channel Mode) |
| Downmix Mono | FF, 03, 00, 10, 31, 44, FF | Direct Mode Selection-Center channel Only (Multi-Channel Mode) |
| Downmix 3 Channel | FF, 03, 00, 10, 39, 4C, FF | Direct Mode Selection-Left, Right and Center channels only (Multi-Channel Mode) |
| Downmix Phantom | FF, 03, 00, 10, 3A, 4D, FF | Direct Mode Selection-No Center Channel (Multi-Channel Mode) |
| Discrete Cinema | FF, 03, 00, 10, 33, 46, FF | Direct Mode Selection-Plays DVD Default (Dolby/DTS) Mode (Multi-Channel Mode) |
| Discrete Cinema/THX | FF, 03, 00, 10, 34, 47, FF | Direct Mode Selection-Plays DVD Default (Dolby/DTS) Mode with THX (Multi-Ch. Mode) |
| Discrete Cinema EX/ES | FF, 03, 00, 10, 35, 48, FF | Direct Mode Selection-Plays DVD Default (Dolby/DTS) Mode w/EXorES (Multi-Ch. Mode) |
| Discrete Cinema EX/ES/THX | FF, 03, 00, 10, 36, 49, FF | Direct Mode Selection-Plays DVD Default (Dolby/DTS) Mode w/ESorES+THX (M-Ch. Mode) |
| DTS Neo:6 Movie | FF, 03, 00, 13, 27, 3D, FF | Direct Mode Selection-Optimized for Movies (Multi-Channel Mode) |
| DTS Neo:6 Movie + THX | FF, 03, 00, 13, 29, 3F, FF | Direct Mode Selection-Optimized for Movies with THX (Multi-Channel Mode) |
| DTS Neo:6 Music | FF, 03, 00, 13, 2B, 41, FF | Direct Mode Selection-Optimized for Music (Multi-Channel Mode) |
| Dolby Pro Logic IIx Movie | FF, 03, 00, 13, 28, 3E, FF | Direct Mode Selection-Optimized for Movies (Multi-Channel Mode) |
| Dolby Pro Logic IIx Movie/THX | FF, 03, 00, 13, 2A, 40, FF | Direct Mode Selection-Optimized for Movies with THX (Multi-Channel Mode) |
| Dolby Pro Logic IIx Music | FF, 03, 00, 13, 2C, 42, FF | Direct Mode Selection-Optimized for Music (Multi-Channel Mode) |
| THX Ultra 2 Movie | FF, 03, 00, 10, 37, 4A, FF | Direct Mode Selection-THX Ultra Mode Optimized for Movies (Multi-Channel Mode) |
| THX Ultra 2 Games | FF, 03, 00, 10, 40, 53, FF | Direct Mode Selection-THX Ultra Mode Optimized for Games (Multi-Channel Mode) |

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|---|---|---|
| THX Ultra 2 Music | FF, 03, 00, 10, 38, 4B, FF | Direct Mode Selection-THX Ultra Mode Optimized for Music (Multi-Channel Mode) |
| Downmix Cinema | FF, 03, 00, 14, 06, 1D, FF | Direct Mode Selection (Multi-Channel Mode - New for 7.1 HD) |
| Downmix Club | FF, 03, 00, 14, 07, 1E, FF | Direct Mode Selection (Multi-Channel Mode - New for 7.1 HD) |
| Downmix Hall | FF, 03, 00, 14, 08, 1F, FF | Direct Mode Selection (Multi-Channel Mode - New for 7.1 HD) |
| Downmix Arena | FF, 03, 00, 14, 09, 20, FF | Direct Mode Selection (Multi-Channel Mode - New for 7.1 HD) |
| Downmix Cathedral | FF, 03, 00, 14, 0A, 21, FF | Direct Mode Selection (Multi-Channel Mode - New for 7.1 HD) |
| Downmix Quad Reverb | FF, 03, 00, 14, 0B, 22, FF | Direct Mode Selection (Multi-Channel Mode - New for 7.1 HD) |
| Stereo Enhance Attn Up | FF, 03, 00, 01, E2, E6, FF | Increments Gain for Stereo Enhance Mode |
| Stereo Enhance Attn Down | FF, 03, 00, 01, E3, E7, FF | Decrements Gain for Stereo Enhance Mode |
| Stereo Enhance Delay Up | FF, 03, 00, 01, E4, E8, FF | Increments Delay for Stereo Enhance Mode |
| Stereo Enhance Delay Down | FF, 03, 00, 01, E5, E9, FF | Decrements Delay for Stereo Enhance Mode |
| Mono Enhance Attn Up | FF, 03, 00, 01, E6, EA, FF | Increments Gain for Mono Enhance Mode |
| Mono Enhance Attn Down | FF, 03, 00, 01, E7, EB, FF | Decrements Gain for Mono Enhance Mode |
| Mono Enhance Delay Up | FF, 03, 00, 01, E8, EC, FF | Increments Delay for Mono Enhance Mode |
| Mono Enhance Delay Down | FF, 03, 00, 01, E9, ED, FF | Decrements Delay for Mono Enhance Mode |
| Dynamic Range @ Max | FF, 03, 00, 01, 49, 4D, FF | Sets Dynamic Range at Maximum for non THX modes only |
| Dynamic Range @ Mid | FF, 03, 00, 01, 4A, 4E, FF | Sets Dynamic Range at the Middle for non THX modes only |
| Dynamic Range @ Min | FF, 03, 00, 01, 4B, 4F, FF | Sets Dynamic Range at Minimum for non THX modes only |
| Center Width Up | FF, 03, 00, 01, F0, F4, FF | Increments Center channel width for Pro Logic II Music and Custom Modes Only |
| Center Width Down | FF, 03, 00, 01, F1, F5, FF | Decrements Center channel width for Pro Logic II Music and Custom Modes Only |
| Panorama On | FF, 03, 00, 01, EE, F2, FF | Turns on Panorama enhancement for Pro Logic II Music and Custom Modes Only |
| Panorama Off | FF, 03, 00, 01, EF, F3, FF | Turns off Panorama enhancement for Pro Logic II Music and Custom Modes Only |
| Dimension Control Up | FF, 03, 00, 01, EC, F0, FF | Increments Dimension Control for Pro Logic II Music and Custom Modes Only |
| Dimension Control Down | FF, 03, 00, 01, ED, F1,FF | Decrements Dimension Control for Pro Logic II Music and Custom Modes Only |
| Surround All Pass | FF, 03, 00, 01, F4, F8, FF | Sets Frequency Pass Filter for Surrounds for Pro Logic II Music and Custom Modes Only |
| Surround LPF @ 7kHz | FF, 03, 00, 01, F5, F9, FF | Sets Frequency Pass Filter for Surrounds for Pro Logic II Music and Custom Modes Only |
| Surround HPF + Shelf | FF, 03, 00, 01, F6, FA, FF | Sets Frequency Pass Filter for Surrounds for Pro Logic II Music and Custom Modes Only |
| Surround Delay On | FF, 03, 00, 01, FC, 00, FF | Turns on surround delay for Pro Logic II Music and Custom Modes Only |
| Surround Delay Off | FF, 03, 00, 01, FD, 01, FF | Turns off surround delay for Pro Logic II Music and Custom Modes Only |
| RS Polarity Inverse On | FF, 03, 00, 01, F7, FB, FF | Turns on RS Polarity Inverse for Pro Logic II Music and Custom Modes Only |
| RS Polarity Inverse Off | FF, 03, 00, 01, F8, FC, FF | Turns off RS Polarity Inverse for Pro Logic II Music and Custom Modes Only |
| Matrix Coef 0 | FF, 03, 00, 01, F9, FD, FF | Sets Matrix Coefficient at 0 for Pro Logic II Music and Custom Modes Only |
| Matrix Coef 1 | FF, 03, 00, 01, FA, FD,FF | Sets Matrix Coefficient at 1 for Pro Logic II Music and Custom Modes Only |
| Matrix Coef 2 | FF, 03, 00, 01, FB, FD, FF | Sets Matrix Coefficient at 2 for Pro Logic II Music and Custom Modes Only |
| Auto Balance On | FF, 03, 00, 01, F2, F6, FF | Turns on Auto Balance for Pro Logic II Music and Custom Modes Only |
| Auto Balance Off | FF, 03, 00, 01, F3, F7, FF | Turns off Auto Balance for Pro Logic II Music and Custom Modes Only |
| Re-Equalization On | FF, 03, 00, 01, 77, 7B, FF | Turns Re-Equalization On (for Non THX Modes Only) |
| Re-Equalization Off | FF, 03, 00, 01, 78, 7C, FF | Turns Re-Equalization Off (for Non THX Modes Only) |
| Decorrelation On | FF, 03, 00, 01, 7B, 7F, FF | Turns Decorrelation On (for Non THX Modes Only) |
| Decorrelation Off | FF, 03, 00, 01, 7C, 80, FF | Turns Decorrelation Off (for Non THX Modes Only) |
| Timbre Match On | FF, 03, 00, 01, 79, 7D, FF | Turns Timbre Match On (for Non THX Modes Only) |
| Timbre Match Off | FF, 03, 00, 01, 7A, 7E, FF | Turns Timbre Match Off (for Non THX Modes Only) |

| **Command Name** | **Hex Command** | **System and Specific Information Update Commands** |
|---|---|---|
| Send Address | FF, 03, 07, 82, 00, 8C, FF | Sends the selected unit address from the PCOS Program to the unit |
| Update All Settings | FF, 03, 00, 00, 0D, 10, FF | Requests an update of all possible settings in the unit |
| Update Turn on Preset/Max | FF, 03, 00, 01, DC, E0, FF | Requests an update of the current Turn On Input Pre-set and Maximum Volume setting |
| Update Input | FF, 03, 00, 10, 84, 97 FF | Requests an update of the currently selected input |
| Update Record | FF, 03, 00, 10, A4, B7 FF | Requests an update of the currently selected record input |
| Update Volume Master | FF, 03, 00, 01, 7F, 83, FF | Requests an update of current master volume setting (in dB) |
| Update Vol/Mst/Fmt/Mode | FF, 03, 00, 01, 81, 85, FF | Requests an update of the current master volume, decoding format and playback mode |
| Update Fmt/Mode/Dyn Rng | FF, 03, 00, 01, 80, 84, FF | Requests an update of the current decoding format, playback mode & dynamic range setting |
| Update Re-Eq/Tim/Decorr | FF, 03, 00, 01, 76, 7A, FF | Requests an update of the current Re-EQ, Timbre Match and Decorrelation settings |
| Update Pro-Logic II Informtn | FF, 03, 00, 01, EB, EF, FF | Requests an update of all Pro Logic II information (only if in Pro Logic II mode) |
| Update Tone Group A | FF, 03, 00, 01, A2, A6, FF | Requests an update of all current Tone Group A Settings |
| Update Tone Groups B | FF, 03, 00, 01, B3, B7, FF | Requests an update of all current Tone Group B Settings |
| Update Speaker Size | FF, 03, 00, 01, 88, 84, FF | Requests an update of all current Speaker size settings |
| Update Balance | FF, 03, 00, 01, 82, 86, FF | Requests an update of all current speaker balance settings |
| Update Delays | FF, 03, 00, 01, 83, 87, FF | Requests an update of all current speaker delay settings |
| Update ASA | FF, 03, 00, 01, 4E, 52, FF | Requests an update of all current Boundary Gain settings |
| Version Request | FF, 03, 00, 00, 0E, 11, FF | Requests an update of all current revs for the unit and chips |
| Installer Default Store | FF, 03, 00, 13, 81, 97, FF | Stores all changes/set-ups/settings as the Installer Default |
| Installer Default Recall | FF, 03, 00, 13, 80, 96, FF | Recalls all changes/set-ups/settings as stored above as the Installer Default |
| Factory Default Recall | FF, 03, 00, 10, FC, 0F, FF | Returns all settings/set-ups to the ADA out of box default recalls |

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|---|---|---|
| PEQ | FF, 03, 00, 15, 40, 58, FF | Turns on the Parametric Equalizer Function |
| PEQ | FF, 03, 00, 15, 41, 59, FF | Turns off the Parametric Equalizer Function |
| PEQ | FF, 03, 00, 15, 43, 5B, FF | Requests the current status of the Parametric Equalizer Function |
| PEQ | FF, 03, 00, 15, 4C, 64, FF | Stores the current PEQ Setting as Preset 1 |
| PEQ | FF, 03, 00, 15, 48, 60, FF | Recalls the current PEQ Setting for Preset 1 |
| PEQ | FF, 03, 00, 15, 4D, 65, FF | Stores the current PEQ Setting as Preset 2 |
| PEQ | FF, 03, 00, 15, 49, 61, FF | Recalls the current PEQ Setting for Preset 2 |
| PEQ | FF, 03, 00, 15, 4E, 66, FF | Stores the current PEQ Setting as Preset 3 |
| PEQ | FF, 03, 00, 15, 4A, 62, FF | Recalls the current PEQ Setting for Preset 3 |
| PEQ | FF, 03, 00, 15, 4F, 67, FF | Stores the current PEQ Setting as Preset 4 |
| PEQ | FF, 03, 00, 15, 4B, 63, FF | Recalls the current PEQ Setting for Preset 4 |
| Dolby Volume | FF 03 00 19 10 2C FF | Updates Cgain Level |
| Dolby Volume | FF 03 00 19 11 2D FF | decrement cgain cinema |
| Dolby Volume | FF 03 00 19 12 2E FF | increment cgain cinema |
| Dolby Volume | FF 03 00 19 20 3C FF | get cgain Music |
| Dolby Volume | FF 03 00 19 21 3D FF | decrement cgain Music |
| Dolby Volume | FF 03 00 19 22 3E FF | increment cgain Music |
| Dolby Volume | FF 03 00 20 01 24 FF | enable Dolby volume |
| Dolby Volume | FF 03 00 20 02 25 FF | disable Dolby volume |
| Dolby Volume | FF 03 00 20 03 26 FF | enable Dolby modeler |
| Dolby Volume | FF 03 00 20 04 27 FF | disable Dolby modeler |
| Dolby Volume | FF 03 00 20 05 28 FF | enable Dolby half mode |
| Dolby Volume | FF 03 00 20 06 29 FF | disable Dolby half mode |
| Dolby Volume | FF 03 00 20 07 2A FF | enable Dolby cinema reference mode |
| Dolby Volume | FF 03 00 20 08 2B FF | disable Dolby cinema reference mode |
| Dolby Volume | FF 03 00 20 10 33 FF | increment Dolby Calibration level |
| Dolby Volume | FF 03 00 20 11 34 FF | decrement Dolby Calibration level |
| Dolby Volume | FF 03 00 20 12 35 FF | increment Dolby Leveler |
| Dolby Volume | FF 03 00 20 13 36 FF | decrement Dolby Leveler |
| Dolby Volume | FF 03 00 20 20 43 FF | Store Dolby Volume Preset 1 |
| Dolby Volume | FF 03 00 20 21 44 FF | Store Dolby Volume Preset 2 |
| Dolby Volume | FF 03 00 20 22 45 FF | Store Dolby Volume Preset 3 |
| Dolby Volume | FF 03 00 20 23 46 FF | Store Dolby Volume Preset 4 |
| Dolby Volume | FF 03 00 20 30 53 FF | Recall Dolby Volume Preset 1 |
| Dolby Volume | FF 03 00 20 31 54 FF | Recall Dolby Volume Preset 2 |
| Dolby Volume | FF 03 00 20 32 55 FF | Recall Dolby Volume Preset 3 |
| Dolby Volume | FF 03 00 20 33 56 FF | Recall Dolby Volume Preset 4 |
| Dolby Volume | FF 03 00 20 40 63 FF | Dolby Leveler Off |
| Dolby Volume | FF 03 00 20 41 64 FF | Dolby Leveler Low |
| Dolby Volume | FF 03 00 20 42 65 FF | Dolby Leveler Med |
| Dolby Volume | FF 03 00 20 43 66 FF | Dolby Leveler High |
| Dolby Volume | FF 03 00 20 80 A3 FF | Dolby Volume Update |
| Dolby Volume | FF 03 00 20 df 02 FF | Set Dolby Leveler to 0 |
| Dolby Volume | FF 03 00 20 e0 03 FF | Set Dolby Leveler to 1 |
| Dolby Volume | FF 03 00 20 e1 04 FF | Set Dolby Leveler to 2 |
| Dolby Volume | FF 03 00 20 e2 05 FF | Set Dolby Leveler to 3 |
| Dolby Volume | FF 03 00 20 e3 06 FF | Set Dolby Leveler to 4 |
| Dolby Volume | FF 03 00 20 e4 07 FF | Set Dolby Leveler to 5 |
| Dolby Volume | FF 03 00 20 e5 08 FF | Set Dolby Leveler to 6 |
| Dolby Volume | FF 03 00 20 e6 09 FF | Set Dolby Leveler to 7 |
| Dolby Volume | FF 03 00 20 e7 0A FF | Set Dolby Leveler to 8 |
| Dolby Volume | FF 03 00 20 e8 0B FF | Set Dolby Leveler to 9 |
| Dolby Volume | FF 03 00 20 e9 0C FF | Set Dolby Leveler to 10 |
| TEQ ON Sequence | FF 03 00 21 0B 2F FF , FF 03 00 21 63 87 FF , FF 03 00 21 02 26 FF , FF 03 00 21 3d 61 FF | |
| TEQ | FF 03 00 22 30 55 FF | TEQ Volume 0.0dB |
| TEQ | FF 03 00 22 31 56 FF | TEQ Volume -0.5dB |
| TEQ | FF 03 00 22 32 57 FF | TEQ Volume -1.0dB |
| TEQ | FF 03 00 22 33 58 FF | TEQ Volume -1.5dB |
| TEQ | FF 03 00 22 34 59 FF | TEQ Volume -2.0dB |
| TEQ | FF 03 00 22 35 5A FF | TEQ Volume -2.5dB |
| TEQ | FF 03 00 22 36 5B FF | TEQ Volume -3.0dB |
| TEQ | FF 03 00 22 37 5C FF | TEQ Volume -3.5dB |
| TEQ | FF 03 00 22 38 5D FF | TEQ Volume -4.0dB |
| TEQ | FF 03 00 22 39 5E FF | TEQ Volume -4.5dB |
| TEQ | FF 03 00 22 3A 5F FF | TEQ Volume -5.0dB |
| TEQ | FF 03 00 22 3E 63 FF | TEQ Off |
| TEQ | FF 03 00 22 3F 64 FF | TEQ Update |